United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Ohio Department of Natural Resources, Division of Soil and Water Conservation; Ohio Agricultural Research and Development Center; Ohio State University Extension; Fairfield Soil and Water Conservation District; and Fairfield County Commissioners

Soil Survey of Fairfield County, Ohio

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How To Use This Soil Survey

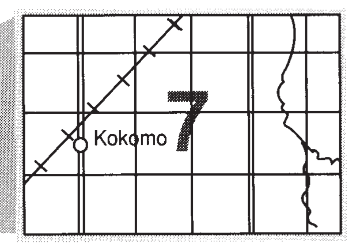
General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

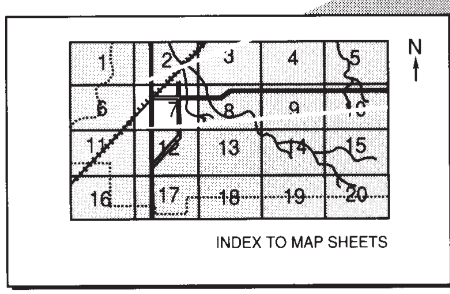
To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.



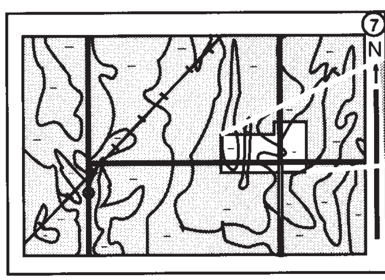
MAP SHEET



INDEX TO MAP SHEETS

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.



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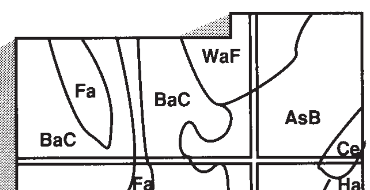

AREA OF INTEREST

NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1995. Soil names and descriptions were approved in 1998. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1995. This survey was made cooperatively by the Natural Resources Conservation Service; the Ohio Department of Natural Resources, Division of Soil and Water Conservation; the Ohio Agricultural Research and Development Center; Ohio State University Extension; the Fairfield Soil and Water Conservation District; and the Fairfield County Commissioners. The survey is part of the technical assistance furnished to the Fairfield Soil and Water Conservation District.

Cover: An autumn view near Beck's Knob, a unique landform in the county. The pastured area consists of Amanda soils. The corn is in an area of Aetna and Westland soils, and the woodland is in an area of Cedarfalls and Loudonville soils.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is http://www.nrcs.usda.gov.

Contents

Issued 2005

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Kevin Brown
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Fairfield County, Ohio

By Stephen J. Hamilton and Matthew H. Deaton, Ohio Department of Natural Resources, Division of Soil and Water Conservation, and Joseph R. Steiger, Richard J. Griffin, Gordon M. Gilmore, Doug B. Dotson, and Eleanor Brandt, Natural Resources Conservation Service

Fieldwork by Gordon M. Gilmore, Richard J. Griffin, David Libben, Joseph Steiger, and Baxter Swearengen, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Ohio Department of Natural Resources, Division of Soil and Water Conservation; the Ohio Agricultural Research and Development Center; Ohio State University Extension; the Fairfield Soil and Water Conservation District; and the Fairfield County Commissioners

Fairfield County is near the center of Ohio (fig. 1). It is bordered by Hocking County on the south, Pickaway County on the southwest, Franklin County on the northwest, Licking County on the north, and Perry County on the east. The total area of the county is 325,357 acres, or about 508 square miles.

In 1990, the population of the county was 119,182. The population of Lancaster, the county seat, was 35,808 (U.S. Department of Commerce, 1990). Other incorporated areas are Amanda, Baltimore, Bremen, Canal Winchester, Carroll, Columbus, Lithopolis, Millersport, Pickerington, Pleasantville, and Reynoldsburg.

Fairfield County is served by Interstate 70 and U.S. Highways 33 and 22. State Routes 37, 159, 188, 204, 256, 664, and 674 also provide access throughout the county. The county has one airport. Zane's Trace, the first federally subsidized local road construction, ran through the county.

Fairfield County has a diverse economy based on the wholesale and retail trade industry, farming and farm-related enterprises, and manufacturing (Boyne, 1979; Carter and Evans, 1983; Ramey and others, 1993).

This soil survey updates the survey of Fairfield County published in 1960 (Meeker and others, 1960). It provides additional information and has larger maps, which show the soils in greater detail.

General Nature of the County

This section provides general information about the county. It describes climate; physiography, relief, and drainage; bedrock geology; and glacial geology.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Lancaster in the period from 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 28 degrees F and the average daily minimum temperature is 18.7 degrees. The lowest temperature on record, which occurred at Lancaster on January 19, 1994, is -24 degrees. In summer, the average temperature is 70.8 degrees and the average daily maximum temperature is 82.8 degrees. The highest temperature, which occurred at Lancaster on July 14, 1936, is 104 degrees.

Figure 1.—Location of Fairfield County in Ohio.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is 36.12 inches. Of this total, 20.85 inches, or about 58 percent, usually falls in April through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall on record was 5.4 inches at Lancaster on September 13, 1938. Thunderstorms occur on about 41 days each year, and most occur in July.

The average seasonal snowfall is about 16 inches. The greatest snow depth at any one time during the period of record was 24 inches recorded on January 27, 1978. On an average, 30 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 13 inches on April 5, 1987.

The average relative humidity in midafternoon is about 59 percent. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 61 percent of the time possible in summer and 36 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 10.5 miles per hour, in March.

Physiography, Relief, and Drainage

The escarpment that marks the western edge of the Allegheny Plateau crosses Fairfield County in an irregular line from the northeast corner to near the southwest corner (fig. 2). The Central Lowland physiographic province lies to the northwest of the escarpment, and the Allegheny Plateau physiographic province lies to the southeast (Soil Survey Division Staff, 1993).

All of the Central Lowland and most of the Allegheny Plateau in this county have been glaciated and covered with various thicknesses of glacial drift. The glaciation occurred in two separate stages. The first deposit of drift material took place when the Illinoian continental ice sheet invaded the county, and the second deposit of drift occurred when the Late Wisconsinan ice sheet covered part of this area (Goldthwait and others, 1961; Wolfe and others, 1962).

Relief in the Central Lowlands Province is mostly undulating. Extensive areas are nearly level. Small areas bordering the major streams are rolling or steeper (Goldthwait and others, 1961; Wolfe and others, 1962). The Allegheny Plateau Province is higher, more rugged, and more dissected than the Central Lowland. Part of the Allegheny Plateau was glaciated during the Late Wisconsinan glacial stage. Strongly undulating and rolling relief is characteristic of this region. Steep-sided ridges and knobs protrude above the general land level (Meeker and others, 1960; Thornbury, 1969; Wolfe and others, 1962). Another part of the Allegheny Plateau, glaciated during the Illinoian stage, is more rugged and has fairly numerous outcrops of sandstone.

The unglaciated part of the Allegheny Plateau west of the Hocking River, in the south-central part of the county, is characterized by steep, narrow, flat-topped ridges and sheer cliffs of sandstone. The unglaciated part of the Allegheny Plateau that is east of the Hocking River also is rugged and strongly dissected, but the hills are more uniformly convex and less steep than those west of the Hocking River.

All of the water in the county drains into the Hocking, Scioto, and Muskingum River systems (fig. 3). Buckeye Lake, in the extreme northeast corner of the county, drains into the Muskingum River system. The northern half of the county is drained by Walnut Creek, which is part of the Scioto River system. Salt

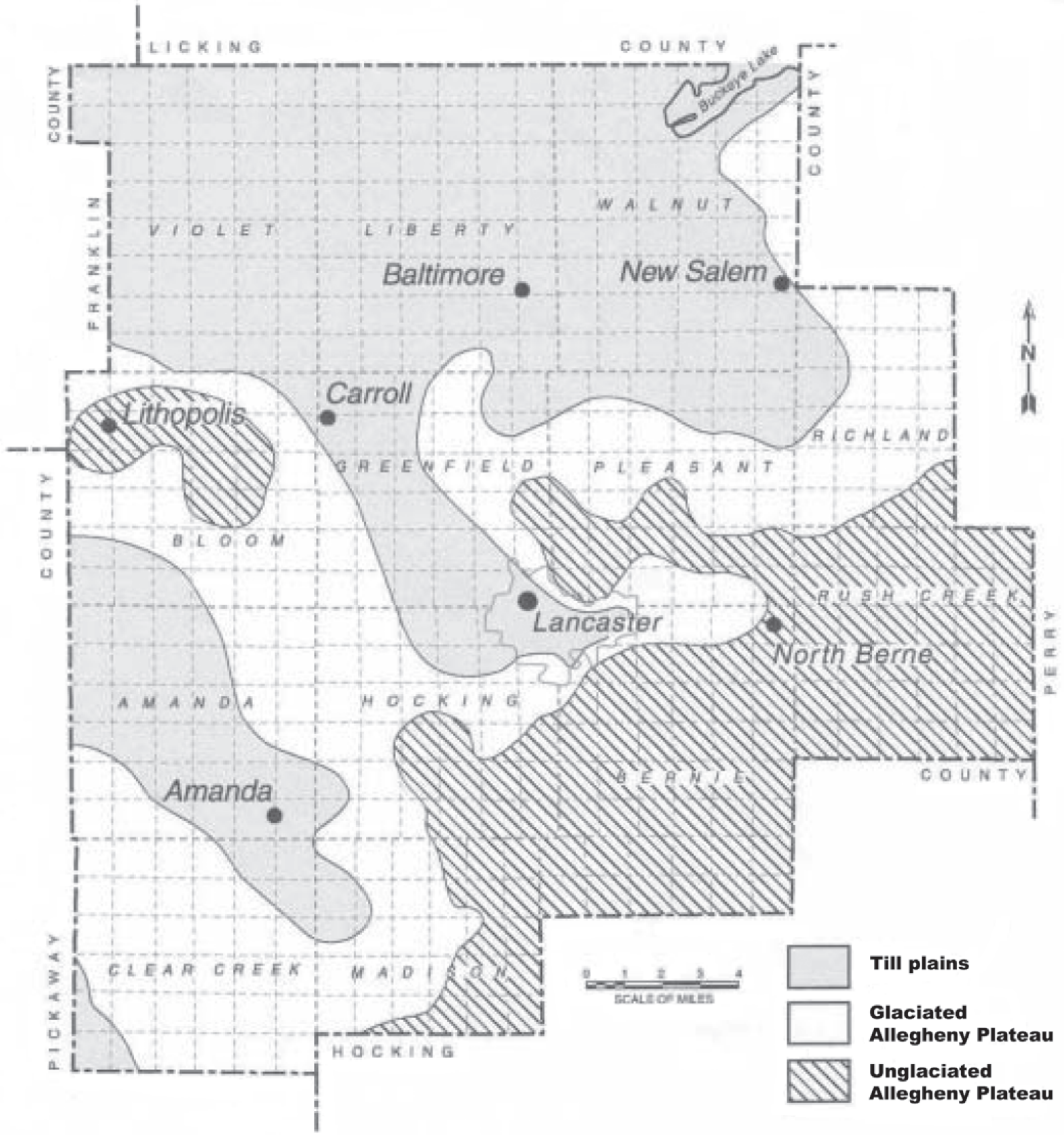

Figure 2.—Physiographic subdivisions of Fairfield County (Wolfe and others, 1962).

Creek, which drains small areas in the extreme west-central and southwestern parts of the county, also empties into the Scioto River system. The central and southeastern parts of the county are drained by the Hocking River (Meeker and others, 1960; Stout and others, 1943; Wolfe and others, 1962).

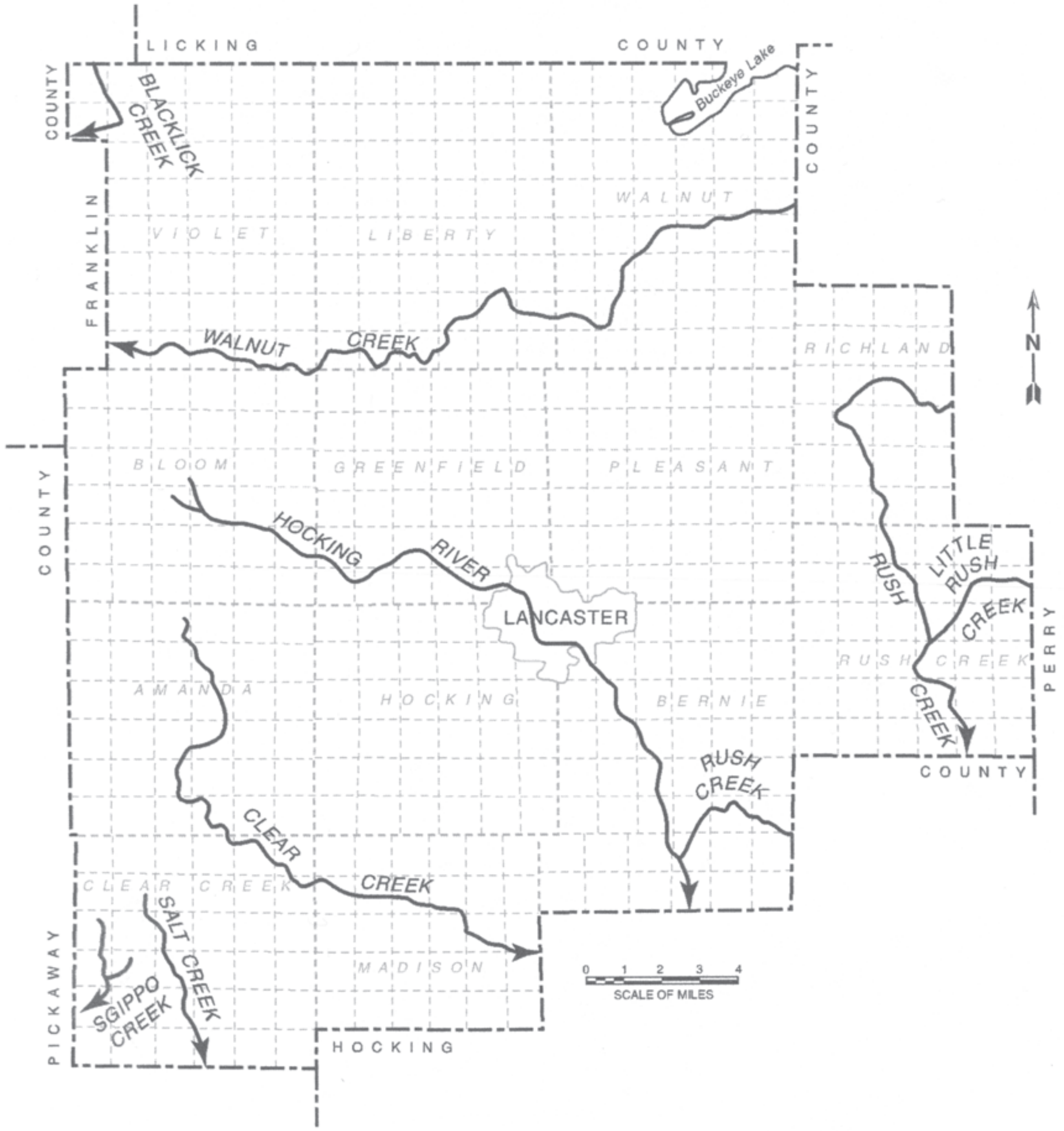

Figure 3.—Major lines of drainage in Fairfield County (Wolfe and others, 1962).

Bedrock Geology

Exposed bedrock in Fairfield County ranges in age from late Devonian or early Mississippian to early Pennsylvanian (Wolfe and others, 1962). Because of the gentle eastward regional dip, the oldest beds outcrop only near the western border of the county and the strata are progressively younger to the east. The stratigraphic section is composed almost entirely of clastic rocks consisting mainly of shales, mudstone, siltstone, sandstone, and conglomerates. In ascending order (fig. 4), this succession includes the Ohio and Olentangy shales of late Devonian system; the Bedford shale, Berea sandstone, and Sunbury shale formations of Kinderhook age in the western part of the county; the Cuyahoga Formation of Kinderhook and Osage age, consisting dominantly of the Raccoon member and the Black Hand member, in the central part of the county; the Logan Formation of Osage age, consisting of the Berne, Byer, and Allensville members, the Rushville Formation, the Cuyahoga Formation, and the Maxville limestone of Meramec age in the northern and eastern parts of the county (making up the Mississippian system); and the Allegheny and Pottsville groups of the Pennsylvanian system on ridgetops in the southeastern part of the

county (Goldthwait and others, 1961; Meeker and others, 1960; Slucher and others; Wolfe and others, 1962).

Glacial Geology

Several glaciations passed over parts of the county during the Pleistocene epoch. Generally, the ice sheets advanced from the northwest. These glaciated areas are covered by till of both the Wisconsinan and the Illinoian ages (Goldthwait and others, 1961; Wolfe and others, 1962).

The earlier glaciation, called the Illinoian, covered all but the southern part of Berne Township and the eastern part of Madison Township. The later glaciation, called the Wisconsinan, did not penetrate so far southward. The outer boundary of Illinoian glaciation extends beyond the limit of the Wisconsinan ice sheet. Southward through the Illinoian glaciated area, there are penetrations of both Wisconsinan and Illinoian outwash. Thus, the Illinoian glaciated area is a comparatively narrow belt between the Late Wisconsinan glacial boundary to the northwest and the unglaciated part of the county to the southeast. The glaciation and deposition of till tended to reduce the contrast between the Central Lowland and the Allegheny Plateau physiographic provinces. Uneven deposits of till gave the till plain of the Central Lowland a billowy topography, but the Allegheny Plateau was smoothed out somewhat as the glaciers scraped the

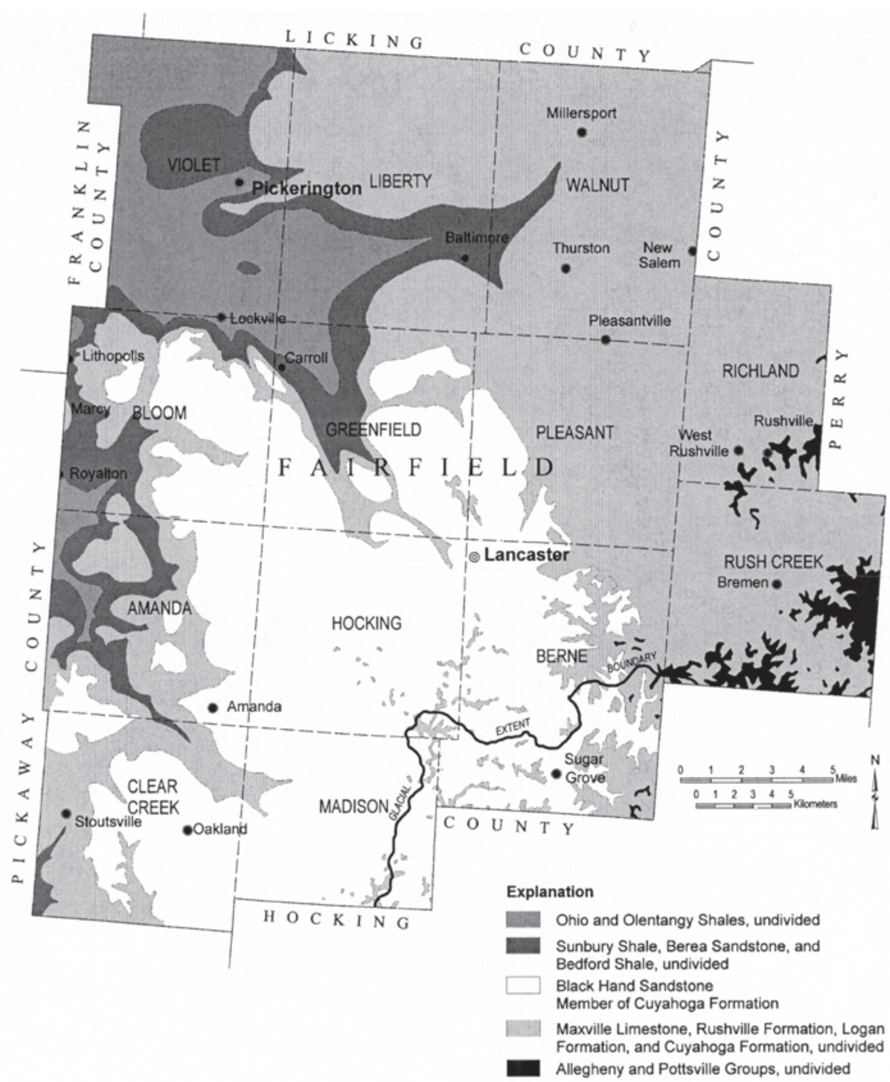

Figure 4.—Bedrock geology of Fairfield County (Slucher and others).

hills and partially filled in the valleys. Nevertheless, the escarpment that marks the edge of the Allegheny Plateau remains a prominent feature of the landscape (Goldthwait and others, 1961; Wolfe and others, 1962).

Glacial terraces of Illinoian age occur on high terraces along the Hocking River between Lancaster and Horn's Mill (Clark Crossing), along Clear Creek, and along the valley between Lancaster and Bremen.

Glacial materials of Wisconsinan age cover most of the county (fig. 5). All of the Wisconsinan till is calcareous, even that on the Allegheny Plateau, except in small areas where the till is thin over bedrock. Much of the till was deposited as ground moraine. This ground moraine was formed when the ice was melting more rapidly than it was advancing. The debris was dropped as the ice retreated. The ground moraine is fairly uniform in thickness, and its surface relief coincides generally with the relief of the bedrock. Thus, the ground moraine of the Central Lowland is smooth and has little topographic expression. Most of the drift on the Allegheny Plateau tends to follow the topography of the underlying bedrock surface (Goldthwait and others, 1961; Wolfe and others, 1962).

Recessional moraines were formed where the rate of melting of the ice was about equal to its rate of advance. Debris was carried forward to the edge and deposited along the ice front. These moraines are hummocky, rolling, and rather elongated. Most are continuous along the former ice front, but in some places they are broken or isolated as a result of stream dissection. Recessional moraines are rather conspicuous on the Central Lowland because they rise in hummocky relief above the general level of the plain. Some of the recessional moraines on the Allegheny Plateau cannot be distinguished from the thinner deposits of till that overlie bedrock ridges.

Three principal types of till are common in this county. They are (1) strongly calcareous Wisconsinan till, (2) moderately calcareous Wisconsinan till, and (3) Illinoian till. The strongly calcareous Wisconsinan till covers most of western Ohio, but only a little of this material is in Fairfield County. This material contains a large proportion of limestone and dolomite and their weathered derivatives. One area is located near Waterloo, another is near Cedar Hill, and a third is near Stoutsville.

The moderately calcareous Wisconsinan till covers 75 percent of the county. This material contains more acid shale and sandstone and less limestone and dolomite than the strongly calcareous Wisconsinan till.

The Illinoian till is characterized by its thinner and extremely patchy distribution (Goldthwait and others, 1961; Wolfe and others, 1962).

Gravelly and sandy outwash of Wisconsinan age is most extensive in the valleys of the Hocking River and Clear Creek. Here, the outwash is in relatively thick, stratified deposits consisting of highly calcareous gravel and sand.

Lacustrine deposits of Wisconsinan age occur both within the Wisconsinan glacial area and south of it. These deposits are mostly calcareous clay and silt, but they include minor lenses of sand and silty clay loam. The deposits are in areas of old glacial lakes that formed during the Wisconsinan. The largest area of calcareous lacustrine deposits of Wisconsinan age lies between Baltimore and Pleasantville. Other areas occur on the valley floor along the Hocking River and Rush Creek.

Disconnected remnants of the Illinoian lacustrine deposits are on the lower valley slopes along the Hocking River and Rush Creek. These deposits are at higher elevations than the Wisconsinan lacustrine deposits (Goldthwait and others, 1961; Meeker and others, 1960; Wolfe and others, 1962).

Other glacial deposits in the county are kames and eskers, which are water-deposited material. Kames are rather low but prominent, moundlike, steep-sided hills that formed from sediments deposited in crevasses in the ice or on the surface of stagnant ice. The gravel hills south of Cedar Hill are kames. Eskers are elongated, winding ridges of stratified gravel and sand deposited by streams that flowed in ice tunnels within the base of the glacier. The Pickerington esker lies between Pickerington and Baltimore, and State Route 256 runs along it. Another esker extends from a point north of Baltimore toward the northwest. Both eskers terminate near Baltimore in a lacustrine deposit.

Covering many areas of the county is loess that originated during the Wisconsinan glaciation or in the postglacial period. Little or no loess mantles the crests of knolls and the steeper side slopes (Goldthwait and others, 1961; Meeker and others, 1960; Wolfe and others, 1962).

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is

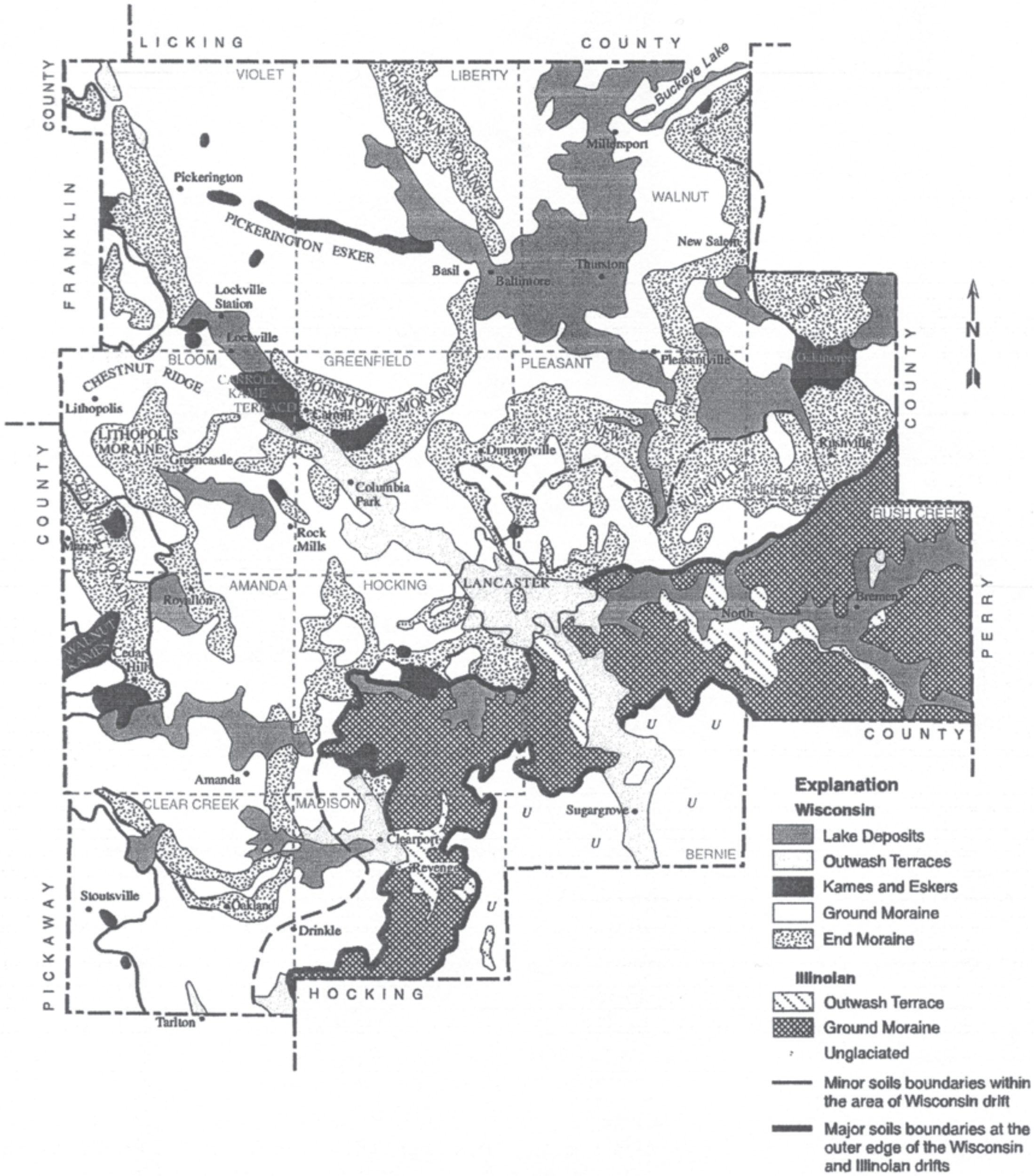

Figure 5.—Generalized distribution of glacial deposits in Fairfield County (Wolfe and others, 1962).

the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the

kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Survey Procedures

The general procedures followed in making this survey are described in the National Soil Survey Handbook (USDA, 2003). The 1960 soil survey of Fairfield County (Meeker and others, 1960) and “Geology of Fairfield County” (Wolfe and others, 1962) were among the references used.

Prior to the soil survey modernization, a soil survey review team conducted an evaluation of the 1960 survey at the request of the Fairfield County Commissioners. A report of the evaluation was prepared and sent to the Ohio Soil Inventory Board for review. After reviewing the evaluation report, the Soil Inventory Board recommended a soil survey modernization program and outlined the work to be completed for the soil survey modernization.

Before actual fieldwork was begun, a detailed study of all existing laboratory data, soil survey reports, and research studies was conducted by the Fairfield County soil survey staff. U.S. Geological Survey topographic maps, at a scale of 1:24,000, were used to relate land and image features.

Fairfield County has a large number of soil series. The 1960 soil survey is a valuable historical document that was relied on extensively during the modernization process. Patterns of soils on the landscape are typically complex. Modern soil science and survey procedures differ from those practiced in the earlier survey. Some series names used in the older survey no longer apply to the soils that were mapped and correlated during this update. In addition,

soil observations and evaluations during the 1960 survey were made to a depth of 60 inches or less. This modernization project routinely made observations and evaluations to a depth of 80 inches or to bedrock.

Recent aerial photographs, photographs from earlier flights, the “Geology Map of Ohio” (Ohio Department of Natural Resources, 1981), and the United States Geological Survey quadrangles were used in making the survey. The maps and soil descriptions in the 1960 survey of Fairfield County were used as references in the correlation of soil series and map units. The older survey was also used to determine the areas of highest variability when mapping and transect intervals were planned.

Areas having the most intensive land use and lowest map unit reliability for soil interpretations were examined first. An example is the northwest corner of the county, with its rapidly expanding urban development. As soil scientists traversed the surface, they divided the landscape into segments based on the use and management of the soils. For example, a flat area would be separated from a depression and a gently sloping knoll or side slope would be separated from a flat area. In most areas, soil examinations along the traverses were made at points 100 to 800 yards apart, depending on the landscape and soil pattern.

Observations of such items as landforms, blown-down trees, vegetation, ditchbanks, and surface colors were made without regard to spacing. Soil boundaries were determined on the basis of soil examinations, observations, and photo interpretation. The soil material was examined to a depth of about 80 inches or to bedrock if the bedrock was at a depth of less than 80 inches. The pedons described as typical were observed and studied in pits that were dug with shovels and spades.

Samples for chemical and physical analyses were taken from representative sites of several of the soils in the survey area. The chemical and physical analyses were made by the Soil Characterization Laboratory, School of Natural Resources, The Ohio State University, Columbus, Ohio. The results of the analyses are stored in a computerized data file at the laboratory. The analyses for engineering properties were made by the Ohio Department of Transportation, Division of Highways, Bureau of Testing, Soils and Foundation Section, Columbus, Ohio. The laboratory procedures can be obtained on request from these respective laboratories. The results of the analyses can be obtained from the School of Natural Resources, The Ohio State University; the Ohio Department of Natural Resources, Division of Soil and Water Conservation; and the Natural Resources Conservation Service, State Office, Columbus, Ohio.

After completion of the soil mapping on aerial photographs, map unit delineations were transferred by hand to another set of the same photographs. Surface features were recorded from observation of the maps and the landscape.

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. These broad areas are called associations. Each association on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one association can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one association differ from place to place in slope, depth, drainage, and other characteristics that affect management.

1. Bennington-Cardington-Pewamo Association

Very deep, nearly level to moderately steep, somewhat poorly drained, moderately well drained, and very poorly drained soils that formed in till (fig. 6)

Setting

Landform: Wisconsinan till plains
Slope range: 0 to 20 percent

Composition

Extent of the association in the county: 12 percent
Extent of the soils in the association:
Bennington soils—40 percent
Cardington soils—30 percent
Pewamo soils—20 percent
Soils of minor extent—10 percent

Soil Properties and Qualities

Bennington

Depth class: Very deep
Drainage class: Somewhat poorly drained
Position on the landform: Summits
Parent material: Till
Texture of the surface layer: Silt loam
Slope: 0 to 6 percent

Cardington

Depth class: Very deep
Drainage class: Moderately well drained
Position on the landform: Summits, shoulders, footslopes, and backslopes
Parent material: Till
Texture of the surface layer: Silt loam
Slope: 2 to 20 percent

Pewamo

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Till
Texture of the surface layer: Silty clay loam
Slope: 0 to 2 percent

Soils of Minor Extent

- Amanda soils on summits and backslopes
- Beaucoup and Marengo soils in depressions
- Centerburg soils on summits
- Shoals soils along drainageways

Use and Management

Major uses: Cropland
Management concerns: Wetness, ponding, restricted permeability, frost action, erosion, shrinking and swelling, surface compaction, surface crusting, clodding, potential for ground-water pollution, high clay content

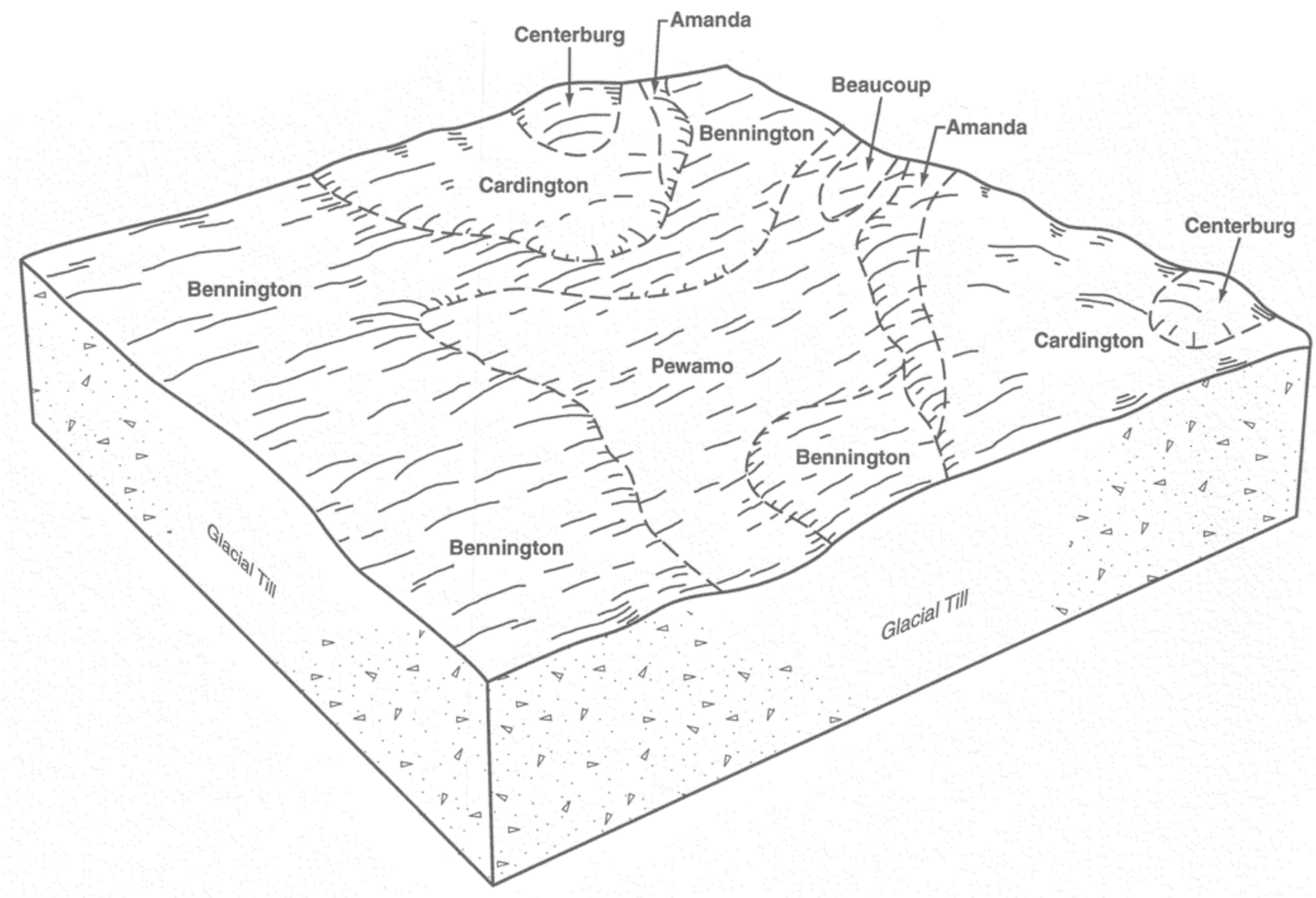

Figure 6.—Typical pattern of soils and parent material in the Bennington-Cardington-Pewamo association.

2. Cardington-Bennington Association

Very deep, nearly level to moderately steep, moderately well drained and somewhat poorly drained soils that formed in till

Setting

Landform: Wisconsinan till plains
Slope range: 0 to 20 percent

Composition

Extent of the association in the county: 5 percent
Extent of the soils in the association:
Cardington soils—40 percent
Bennington soils—15 percent
Soils of minor extent—45 percent

Soil Properties and Qualities

Cardington

Depth class: Very deep
Drainage class: Moderately well drained
Position on the landform: Summits, shoulders, backslopes, and footslopes
Parent material: Till
Texture of the surface layer: Silt loam
Slope: 2 to 20 percent

Bennington

Depth class: Very deep
Drainage class: Somewhat poorly drained
Position on the landform: Summits
Parent material: Till
Texture of the surface layer: Silt loam
Slope: 0 to 6 percent

Soils of Minor Extent

- Amanda soils on summits and backslopes
- Centerburg soils on summits
- Marengo and Pewamo soils in depressions

Use and Management

Major uses: Cropland
Management concerns: Wetness, restricted permeability, frost action, erosion, shrinking and swelling, surface compaction, surface crusting

3. Amanda-Centerburg Association

Very deep, gently sloping to steep, well drained and moderately well drained soils that formed in a thin layer of loess over till

Setting

Landform: Wisconsinan till plains (fig. 7)
Slope range: 2 to 35 percent

Composition

Extent of the association in the county: 23 percent
Extent of the soils in the association:
Amanda soils—45 percent
Centerburg soils—30 percent
Soils of minor extent—25 percent

Soil Properties and Qualities

Amanda

Depth class: Very deep
Drainage class: Well drained
Position on the landform: Summits, shoulders, footslopes, and backslopes
Parent material: Thin layer of loess over till
Texture of the surface layer: Silt loam, silty clay loam, or loam
Slope: 2 to 35 percent

Centerburg

Depth class: Very deep
Drainage class: Moderately well drained
Position on the landform: Shoulders and summits
Parent material: Thin layer of loess over till
Texture of the surface layer: Silt loam
Slope: 2 to 12 percent

Soils of Minor Extent

- Bennington soils in swales
- Cardington soils on summits and backslopes

Figure 7.—An area of the Amanda-Centerburg association. Amanda soils are in the foreground. Westland and Aetna soils are on the terraces and flood plain. Centerburg soils are in the areas around the buildings. Loudonville and Amanda soils are in the background.

- Loudonville soils on backslopes
- Marengo and Pewamo soils in depressions

Use and Management

Major uses: Cropland, pasture, and woodland
Management concerns: Wetness, slope, frost action, erosion, low strength, surface compaction, surface crusting

4. Centerburg-Marengo-Bennington Association

Very deep, nearly level to strongly sloping, moderately well drained, very poorly drained, and somewhat poorly drained soils that formed in till or in loess over till

Setting

Landform: Wisconsinan till plains
Slope range: 0 to 12 percent

Composition

Extent of the association in the county: 20 percent
Extent of the soils in the association:
Centerburg soils—40 percent
Marengo soils—15 percent
Bennington soils—15 percent
Soils of minor extent—30 percent

Soil Properties and Qualities

Centerburg

Depth class: Very deep
Drainage class: Moderately well drained
Position on the landform: Summits, footslopes, and shoulders
Parent material: Thin layer of loess over till
Texture of the surface layer: Silt loam
Slope: 2 to 12 percent

Marengo

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Till
Texture of the surface layer: Silt loam or clay loam
Slope: 0 to 2 percent

Bennington

Depth class: Very deep
Drainage class: Somewhat poorly drained
Position on the landform: Summits
Parent material: Till
Texture of the surface layer: Silt loam
Slope: 0 to 6 percent

Soils of Minor Extent

- Amanda soils on summits and backslopes
- Corwin soils on summits
- Loudonville soils on backslopes
- Pewamo soils in depressions

Use and Management

Major uses: Cropland, pasture, and woodland
Management concerns: Wetness, ponding, restricted permeability, slope, shrinking and swelling, frost action, low strength, erosion, surface compaction, surface crusting, potential for ground-water pollution

5. Miamian-Kokomo-Celina Association

Very deep, nearly level to moderately steep, well drained, very poorly drained, and moderately well drained soils that formed in till or in loess over till (fig. 8)

Setting

Landform: Wisconsinan till plains
Slope range: 0 to 20 percent

Composition

Extent of the association in the county: 5 percent
Extent of the soils in the association:
Miamian soils—30 percent
Kokomo soils—25 percent
Celina soils—20 percent
Soils of minor extent—25 percent

Soil Properties and Qualities

Miamian

Depth class: Very deep
Drainage class: Well drained
Position on the landform: Summits, shoulders, and footslopes
Parent material: Thin layer of loess over till
Texture of the surface layer: Silt loam, silty clay loam, or clay loam
Slope: 2 to 20 percent

Kokomo

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Till
Texture of the surface layer: Silt loam or silty clay loam
Slope: 0 to 2 percent

Celina

Depth class: Very deep

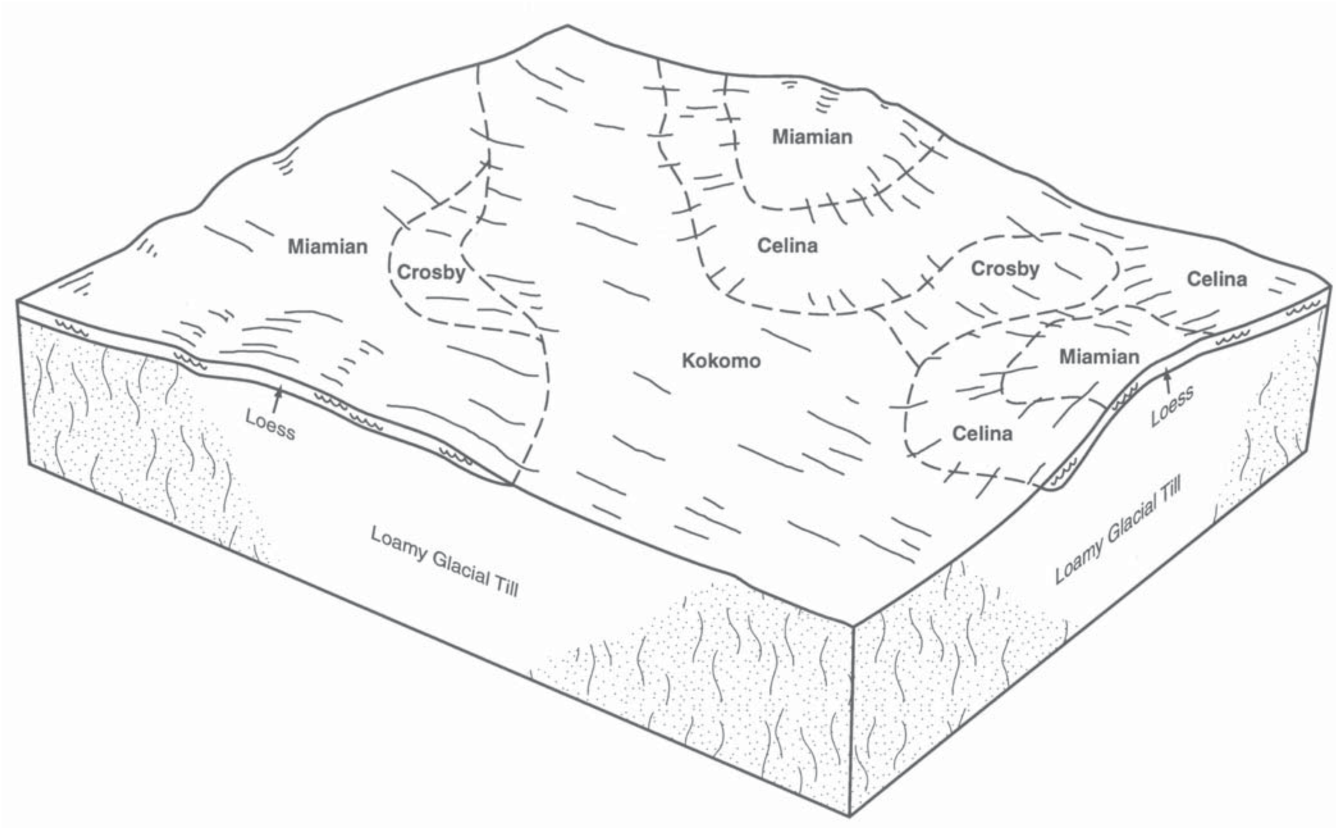

Figure 8.—Typical pattern of soils and parent material in the Miamian-Kokomo-Celina association.

Drainage class: Moderately well drained
Position on the landform: Summits and shoulders
Parent material: Thin layer of loess over till
Texture of the surface layer: Silt loam
Slope: 2 to 6 percent

Soils of Minor Extent

- Crosby soils on summits and footslopes

Use and Management

Major uses: Cropland
Management concerns: Wetness, ponding, potential for ground-water pollution, erosion, high clay content, root-restricting layer, limited available water capacity, frost action, surface compaction, surface crusting

6. Miamian-Celina-Crosby Association

Very deep, nearly level to strongly sloping, well drained, moderately well drained, and somewhat poorly drained soils that formed in till or in loess over till

Setting

Landform: Till plains
Slope range: 0 to 12 percent

Composition

Extent of the association in the county: 1 percent
Extent of the soils in the association:
Miamian soils—25 percent
Celina soils—20 percent
Crosby soils—20 percent
Soils of minor extent—35 percent

Soil Properties and Qualities

Miamian

Depth class: Very deep
Drainage class: Well drained
Position on the landform: Summits, shoulders, and footslopes

Parent material: Till
Texture of the surface layer: Silt loam or silty clay loam
Slope: 2 to 12 percent

Celina

Depth class: Very deep
Drainage class: Moderately well drained
Position on the landform: Summits
Parent material: Loess over till
Texture of the surface layer: Silt loam
Slope: 2 to 6 percent

Crosby

Depth class: Very deep
Drainage class: Somewhat poorly drained
Position on the landform: Summits
Parent material: Loess over till
Texture of the surface layer: Silt loam
Slope: 0 to 2 percent

Soils of Minor Extent

- Kokomo soils in depressions

Use and Management

Major uses: Cropland
Management concerns: Wetness, erosion, high clay content, root-restricting layer, limited available water capacity, frost action, surface compaction, surface crusting

7. Gessie-Aetna Association

Very deep, nearly level, well drained and somewhat poorly drained soils that formed in alluvium or in alluvium over glaciolacustrine deposits

Setting

Landform: Flood plains
Slope range: 0 to 2 percent

Composition

Extent of the association in the county: 4 percent
Extent of the soils in the association:
Gessie soils—20 percent
Aetna soils—20 percent
Soils of minor extent—60 percent

Soil Properties and Qualities

Gessie

Depth class: Very deep
Drainage class: Well drained
Parent material: Alluvium
Texture of the surface layer: Silt loam
Slope: 0 to 2 percent

Aetna

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Alluvium or alluvium over glaciolacustrine deposits
Texture of the surface layer: Silt loam
Slope: 0 to 2 percent

Soils of Minor Extent

- Amanda soils on backslopes
- Beaucoup soils in depressions and on flats

Use and Management

Major uses: Cropland
Management concerns: Flooding, wetness, potential for ground-water pollution, frost action, surface compaction, surface crusting

8. Newark-Lindside-Chagrin Association

Very deep, nearly level, somewhat poorly drained, moderately well drained, and well drained soils that formed in alluvium

Setting

Landform: Flood plains
Slope range: 0 to 2 percent

Composition

Extent of the association in the county: 1 percent
Extent of the soils in the association:
Newark soils—30 percent
Lindside soils—15 percent
Chagrin soils—15 percent
Soils of minor extent—40 percent

Soil Properties and Qualities

Newark

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Alluvium
Texture of the surface layer: Silt loam
Slope: 0 to 2 percent

Lindside

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Alluvium
Texture of the surface layer: Silt loam
Slope: 0 to 2 percent

Chagrin

Depth class: Very deep
Drainage class: Well drained
Parent material: Alluvium
Texture of the surface layer: Silt loam
Slope: 0 to 2 percent

Soils of Minor Extent

- Glenford and Fox soils on treads and risers
- Sebring soils on treads

Use and Management

Major uses: Cropland
Management concerns: Flooding, wetness, potential for ground-water pollution, frost action, surface compaction, surface crusting

9. Ockley-Fox Association

Very deep, nearly level to moderately steep, well drained soils that formed in loamy sediments over stratified sand and gravel

Setting

Landform: Outwash terraces
Slope range: 0 to 20 percent

Composition

Extent of the association in the county: 6 percent
Extent of the soils in the association:
Ockley soils—20 percent
Fox soils—15 percent
Components of minor extent—65 percent

Soil Properties and Qualities

Ockley

Depth class: Very deep
Drainage class: Well drained
Position on the landform: Treads
Parent material: Loamy sediments over stratified sand and gravel
Texture of the surface layer: Silt loam
Slope: 0 to 6 percent

Fox

Depth class: Very deep
Drainage class: Well drained
Position on the landform: Treads and risers
Parent material: Loamy sediments over stratified sand and gravel
Texture of the surface layer: Loam or silt loam
Slope: 0 to 20 percent

Components of Minor Extent

- Westland and Thackery soils on treads
- Urban land in areas of manmade excavations and fills
- Amanda soils on summits and backslopes

Use and Management

Major uses: Cropland
Management concerns: Potential for ground-water pollution, frost action, surface compaction, surface crusting, erosion, limited available water capacity

10. Patton-Aetna Association

Very deep, nearly level, very poorly drained and somewhat poorly drained soils that formed in glaciolacustrine deposits, in alluvium, or in alluvium over glaciolacustrine deposits

Setting

Landform: Lake basins, flood plains, and low terraces
Slope range: 0 to 2 percent

Composition

Extent of the association in the county: 6 percent
Extent of the soils in the association:
Patton soils—25 percent
Aetna soils—15 percent
Soils of minor extent—60 percent

Soil Properties and Qualities

Patton

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Glaciolacustrine deposits
Texture of the surface layer: Silty clay loam
Slope: 0 to 2 percent

Aetna

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Alluvium or alluvium over glaciolacustrine deposits
Texture of the surface layer: Silt loam
Slope: 0 to 2 percent

Soils of Minor Extent

- Canal soils on treads
- Glenford soils on treads and risers

Use and Management

Major uses: Cropland

Management concerns: Frost action, ponding, flooding, erosion, wetness, potential for ground-water pollution, surface compaction, surface crusting

11. Hickory-Cincinnati Association

Very deep, strongly sloping to steep, well drained and moderately well drained soils that formed in till or in loess over till

Setting

Landform: Illinoian till plains
Slope range: 6 to 35 percent

Composition

Extent of the association in the county: 3 percent
Extent of the soils in the association:
Hickory soils—25 percent
Cincinnati soils—15 percent
Soils of minor extent—60 percent

Soil Properties and Qualities

Hickory

Depth class: Very deep
Drainage class: Well drained
Position on the landform: Shoulders and backslopes
Parent material: Till
Texture of the surface layer: Silt loam or loam
Slope: 6 to 35 percent

Cincinnati

Depth class: Very deep
Drainage class: Moderately well drained
Position on the landform: Summits and shoulders
Parent material: Loess over till
Texture of the surface layer: Silt loam
Slope: 6 to 12 percent

Soils of Minor Extent

- Germano soils on backslopes
- Alford soils on summits and shoulders

Use and Management

Major uses: Cropland, pasture, and woodland
Management concerns: Slope, low strength, frost action, erosion, root-restricting layer, limited available water capacity, surface compaction, surface crusting

12. Shelocta-Berks-Gilpin Association

Moderately deep to very deep, strongly sloping to very steep, well drained soils that formed in colluvium or residuum (fig. 9)

Setting

Landform: Hills
Slope range: 6 to 70 percent

Composition

Extent of the association in the county: 3 percent
Extent of the soils in the association:
Shelocta soils—25 percent
Berks soils—20 percent
Gilpin soils—15 percent
Soils of minor extent—40 percent

Soil Properties and Qualities

Shelocta

Depth class: Deep or very deep
Drainage class: Well drained
Position on the landform: Backslopes and footslopes
Parent material: Colluvium derived from siltstone, shale, and sandstone
Texture of the surface layer: Silt loam or loam
Slope: 15 to 40 percent

Berks

Depth class: Moderately deep
Drainage class: Well drained
Position on the landform: Backslopes
Parent material: Residuum derived from siltstone and fine grained sandstone
Texture of the surface layer: Channery silt loam
Slope: 25 to 70 percent

Gilpin

Depth class: Moderately deep
Drainage class: Well drained
Position on the landform: Shoulders, footslopes, and backslopes
Parent material: Residuum derived from sandstone and siltstone
Texture of the surface layer: Silt loam
Slope: 6 to 35 percent

Soils of Minor Extent

- Wellston soils on summits
- Medway soils on flood plains

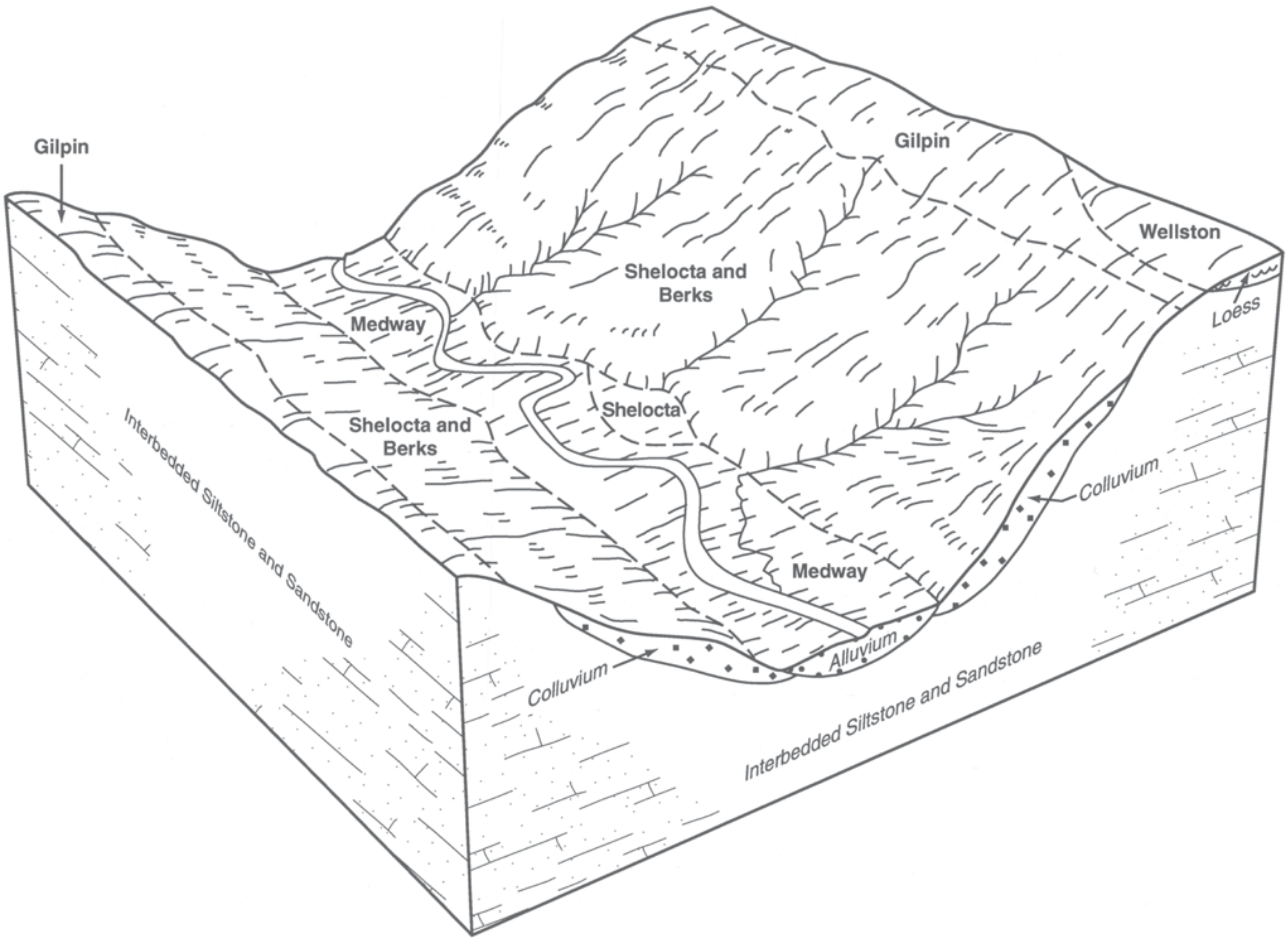

Figure 9.—Typical pattern of soils and parent material in the Shelocta-Berks-Gilpin association.

Use and Management

Major uses: Woodland
Management concerns: Slope, erosion, depth to bedrock, low strength, high content of rock fragments

13. Germano-Gilpin-Shelocta Association

Moderately deep to very deep, strongly sloping to very steep, well drained soils that formed in colluvium or residuum

Setting

Landform: Hills
Slope range: 6 to 70 percent

Composition

Extent of the association in the county: 5 percent
Extent of the soils in the association:
Germano soils—45 percent
Gilpin soils—20 percent
Shelocta soils—15 percent
Soils of minor extent—20 percent

Soil Properties and Qualities

Germano

Depth class: Moderately deep
Drainage class: Well drained
Position on the landform: Backslopes, footslopes, and shoulders
Parent material: Residuum derived from sandstone

Texture of the surface layer: Sandy loam or channery sandy loam
Slope: 15 to 70 percent

Gilpin

Depth class: Moderately deep
Drainage class: Well drained
Position on the landform: Shoulders, footslopes, and summits
Parent material: Residuum derived from sandstone and siltstone
Texture of the surface layer: Silt loam
Slope: 6 to 25 percent

Shelocta

Depth class: Deep or very deep
Drainage class: Well drained
Position on the landform: Backslopes and footslopes
Parent material: Colluvium derived from siltstone
Texture of the surface layer: Silt loam or channery silt loam
Slope: 15 to 40 percent

Soils of Minor Extent

- Wellston soils on summits

Use and Management

Major uses: Woodland
Management concerns: Slope, erosion, depth to bedrock, low strength, high content of rock fragments

14. Alford-Cincinnati-Homewood Association

Very deep, gently sloping to steep, well drained and moderately well drained soils that formed in loess or in loess over till

Setting

Landform: Illinoian glaciated hills and till plains
Slope range: 2 to 35 percent

Composition

Extent of the association in the county: 6 percent
Extent of the soils in the association:
Alford soils—15 percent
Cincinnati soils—15 percent
Homewood soils—15 percent
Soils of minor extent—55 percent

Soil Properties and Qualities

Alford

Depth class: Very deep
Drainage class: Well drained
Position on the landform: Shoulders and summits
Parent material: Loess
Texture of the surface layer: Silt loam
Slope: 2 to 12 percent

Cincinnati

Depth class: Very deep
Drainage class: Moderately well drained
Position on the landform: Summits and shoulders
Parent material: Loess over till
Texture of the surface layer: Silt loam
Slope: 6 to 12 percent

Homewood

Depth class: Very deep
Drainage class: Moderately well drained
Position on the landform: Backslopes, summits, shoulders, and footslopes
Parent material: Loess over till
Texture of the surface layer: Silt loam
Slope: 6 to 35 percent

Soils of Minor Extent

- Berks and Negley soils on backslopes
- Gilpin soils on backslopes, summits, and shoulders

Use and Management

Major uses: Cropland, pasture, and woodland
Management concerns: Slope, low strength, root-restricting layer, frost action, erosion, surface crusting, surface compaction, limited available water capacity

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for most of the major uses of the soils—cropland, pastureland, forestland, building site development, septic tank absorption fields, and local roads and streets. The soil features that are the most limiting for a certain use are described. In some cases, specific measures that may help to overcome the effects of these limiting soil features are suggested. The mention of such management measures is not a recommendation, especially where current laws or programs may prohibit an activity, such as installation of drainage systems. Even the best management practices cannot overcome some soil limitations.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Centerburg silt loam, 2 to 6 percent slopes, is a phase of the Centerburg series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called complexes. A *complex* consists of two or more

soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Amanda-Loudonville complex, 12 to 20 percent slopes, eroded, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. The map unit Pits, quarry, is an example.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Figure 10 shows the relationship between different geomorphic positions and slope terminology. These terms generally are not used in areas of low relief in Fairfield County. More detailed definitions of these terms are in the Glossary.

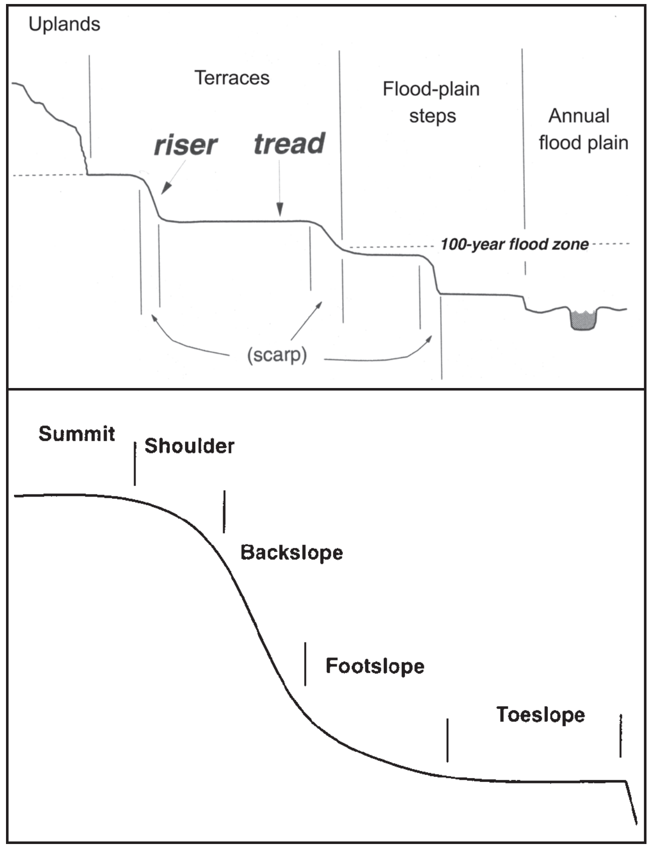

Figure 10.—Diagrams showing the relationships between landform, position on the landform, and slope terminology (adapted from Ruhe, 1975, and Schoeneberger and Wysocki, 1996).

AfB—Alford silt loam, 2 to 6 percent slopes

Setting

Landform: Loess hills
Position on the landform: Summits

Map Unit Composition

Alford and similar soils: 90 percent
Contrasting components:
Cincinnati soils: 5 percent
Wellston soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 11.4 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 5 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 3.0 percent
Parent material: Loess
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• A loss of soil productivity may occur following an episode of fire.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

AfC2—Alford silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: Loess hills
Position on the landform: Shoulders, backslopes, and footslopes

Map Unit Composition

Alford and similar soils: 90 percent
Contrasting components:
Cincinnati soils: 5 percent
Wellston soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 11 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 5 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 3.0 percent
Parent material: Loess
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.
• Burning may destroy organic matter.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

Ag—Aetna silt loam, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Aetna and similar soils: 80 percent
Contrasting components:
Patton soils: 10 percent
Beaucoup soils: 5 percent
Eel soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 10.8 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 24 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1 to 2 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Silty alluvium over glaciolacustrine deposits
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.

• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
• Small grain crops may be damaged by flooding in winter and spring.
• Subsurface drainage can lower the seasonal high water table.

Pastureland

• Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
• Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Flooding may result in damage to haul roads and increased maintenance costs.
• Soil wetness may limit the use of this soil by log trucks.
• Flooding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.

Septic tank absorption fields

• This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-3
Hydric classification: Not hydric

Ah—Aetna silt loam, fan, occasionally flooded

Setting

Landform: Alluvial fans

Map Unit Composition

Aetna and similar soils: 85 percent
Contrasting components:
Beaucoup soils: 5 percent
Eel soils: 5 percent
Patton soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 10.8 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 24 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1 to 2 feet
Kind of water table: Apparent

Ponding: None
Drainage class: Somewhat poorly drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Silty alluvium over glaciolacustrine deposits
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- The root system of winter grain crops may be damaged by frost action.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
- Small grain crops may be damaged by flooding in winter and spring.
- Subsurface drainage can lower the seasonal high water table.

Pastureland

- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- The root system of plants may be damaged by frost action.
- Restricting grazing during wet periods can minimize compaction.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Flooding may result in damage to haul roads and increased maintenance costs.
- Soil wetness may limit the use of log trucks.
- Flooding restricts the safe use of roads by log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

- Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.

Septic tank absorption fields

- This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-3
Hydric classification: Not hydric

AmB—Amanda silt loam, 2 to 6 percent slopes

Setting

Landform: Slight rises on Wisconsinan till plains
Position on the landform: Summits

Map Unit Composition

Amanda and similar soils: 85 percent
Contrasting components:
Bennington soils: 10 percent
Marengo soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 9.3 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

AmB2—Amanda silt loam, 2 to 6 percent slopes, eroded

Setting

Landform: Slight rises on Wisconsinan till plains
Position on the landform: Summits and shoulders

Map Unit Composition

Amanda and similar soils: 85 percent
Contrasting components:
Bennington soils: 10 percent
Marengo soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 10.2 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

AmC2—Amanda silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: Wisconsinan till plains

Position on the landform: Backslopes, shoulders, and footslopes

Map Unit Composition

Amanda and similar soils: 80 percent
Contrasting components:
Loudonville soils: 10 percent
Marengo soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 10.2 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland (fig. 11)

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Figure 11.—The cropped area in the foreground is Amanda silt loam, 6 to 12 percent slopes, eroded. Cedarfalls-Rock outcrop complex, 40 to 70 percent slopes, is in the background.

• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

AmD2—Amanda silt loam, 12 to 20 percent slopes, eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Footslopes and backslopes

Map Unit Composition

Amanda and similar soils: 80 percent
Contrasting components:
Cardington soils: 10 percent
Loudonville soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 7.4 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained

Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

AmE2—Amanda silt loam, 20 to 35 percent slopes, eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Backslopes

Map Unit Composition

Amanda and similar soils: 90 percent
Contrasting components:
Loudonville soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 8.1 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• The slope may restrict the use of some farm equipment.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
• Because of the slope, the use of mechanical planting equipment is not practical.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 6e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-3
Hydric classification: Not hydric

AoC3—Amanda silty clay loam, 6 to 12 percent slopes, severely eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Footslopes, shoulders, and backslopes

Map Unit Composition

Amanda and similar soils: 80 percent
Contrasting components:
Loudonville soils: 10 percent
Thrifton soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 7.7 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 22 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silty clay loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Burning may destroy organic matter.

Building site development

- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

AoD3—Amanda silty clay loam, 12 to 20 percent slopes, severely eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Footslopes and backslopes

Map Unit Composition

Amanda and similar soils: 80 percent
Contrasting components:
Loudonville soils: 10 percent
Thrifton soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 8 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 22 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silty clay loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.
• Burning may destroy organic matter.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.

Septic tank absorption fields

• The restricted permeability of this soil limits the

absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 6e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

ApB2—Amanda-Loudonville complex, 2 to 6 percent slopes, eroded

Setting

Landform: Slight rises on Wisconsinan till plains
Position on the landform: Summits and shoulders

Map Unit Composition

Amanda and similar soils: 60 percent
Loudonville and similar soils: 30 percent
Contrasting components:
Steinsburg soils: 10 percent

Soil Properties and Qualities

Amanda

Available water capacity: About 9.4 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Loudonville

Available water capacity: About 5.6 inches to a depth of 39 inches
Cation-exchange capacity in the surface layer: 8 to 18 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till over residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Amanda Soil

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic

matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Use and Management Considerations Affecting the Loudonville Soil

Cropland

• The rooting depth of crops is restricted by bedrock.
• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The rooting depth of plants may be restricted by bedrock.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil increases the cost of constructing haul roads and log landings.
• Bedrock may interfere with the construction of haul roads and log landing sites.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: Amanda—A-1; Loudonville—F-1
Hydric classification: Amanda—not hydric; Loudonville—not hydric

ApC2—Amanda-Loudonville complex, 6 to 12 percent slopes, eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Footslopes, backslopes, and shoulders

Map Unit Composition

Amanda and similar soils: 50 percent
Loudonville and similar soils: 40 percent
Contrasting components:
Steinsburg soils: 10 percent

Soil Properties and Qualities

Amanda

Available water capacity: About 10.6 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Loudonville

Available water capacity: About 5.7 inches to a depth of 35 inches
Cation-exchange capacity in the surface layer: 8 to 18 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till over residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Amanda Soil

Cropland

- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope may restrict the use of some mechanical planting equipment.

Building site development

- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
- Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Loudonville Soil

Cropland

- The rooting depth of crops is restricted by bedrock.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The rooting depth of plants may be restricted by bedrock.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Bedrock may interfere with the construction of haul roads and log landing sites.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Amanda—A-1; Loudonville—F-1
Hydric classification: Amanda—not hydric; Loudonville—not hydric

ApD2—Amanda-Loudonville complex, 12 to 20 percent slopes, eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Footslopes and backslopes

Map Unit Composition

Amanda and similar soils: 45 percent
Loudonville and similar soils: 45 percent
Contrasting components:
Steinsburg soils: 10 percent

Soil Properties and Qualities

Amanda

Available water capacity: About 8.3 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum

and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Loudonville

Available water capacity: About 5 inches to a depth of 36 inches
Cation-exchange capacity in the surface layer: 8 to 18 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till over residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Clay loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Amanda Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not

be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
- Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Loudonville Soil

Cropland

- The rooting depth of crops is restricted by bedrock.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.
- The rooting depth of plants may be restricted by bedrock.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Bedrock may interfere with the construction of haul roads and log landing sites.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

- The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

- The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Amanda—A-1;
 Loudonville—F-1
Hydric classification: Amanda—not hydric;
 Loudonville—not hydric

ArC2—Amanda-Ockley complex, 6 to 12 percent slopes, eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Backslopes, shoulders, and footslopes

Map Unit Composition

Amanda and similar soils: 50 percent
Ockley and similar soils: 30 percent
Contrasting components:
Loudonville soils: 10 percent
Thrifton soils: 10 percent

Soil Properties and Qualities

Amanda

Available water capacity: About 9 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Ockley

Available water capacity: About 7.1 inches to a depth of 47 inches
Cation-exchange capacity in the surface layer: 3 to 15 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 40 to 72 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Amanda Soil

Cropland

- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope may restrict the use of some mechanical planting equipment.

Building site development

- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Ockley Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost

action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Amanda—A-1; Ockley—A-1
Hydric classification: Amanda—not hydric; Ockley—not hydric

ArD2—Amanda-Ockley complex, 12 to 20 percent slopes, eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Footslopes and backslopes

Map Unit Composition

Amanda and similar soils: 50 percent
Ockley and similar soils: 30 percent
Contrasting components:
Loudonville soils: 10 percent
Thrifton soils: 10 percent

Soil Properties and Qualities

Amanda

Available water capacity: About 8.4 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Ockley

Available water capacity: About 5.7 inches to a depth of 35 inches
Cation-exchange capacity in the surface layer: 3 to 15 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 33 to 72 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Amanda Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation

of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Ockley Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil increases the cost of constructing haul roads and log landings.
• Sandy layers in this soil increase the maintenance of haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Amanda—A-1; Ockley—A-1
Hydric classification: Amanda—not hydric; Ockley—not hydric

Bb—Beaucoup silty clay loam, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Beaucoup and similar soils: 80 percent
Contrasting components:
  Gessie soils: 10 percent
  Medway soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 11.2 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 26 to 33 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At the surface to 0.5 foot below the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0.0 to 0.5 foot
Drainage class: Poorly drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 5 to 6 percent
Parent material: Alluvium
Permeability: Moderately slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silty clay loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
• Small grain crops may be damaged by flooding in winter and spring.
• A combination of surface and subsurface drainage helps to remove excess water.

Pastureland

• Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
• Sediment left on forage plants after a flood event

may reduce palatability and forage intake by the grazing animal.
• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Flooding may result in damage to haul roads and increased maintenance costs.
• Soil wetness may limit the use of log trucks.
• Flooding and ponding restrict the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.
• A loss of soil productivity may occur following an episode of fire.

Building site development

• Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.
• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

• This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.
• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-3
Hydric classification: Hydric

BeA—Bennington silt loam, 0 to 2 percent slopes

Setting

Landform: Flats on Wisconsinan till plains
Position on the landform: Summits

Map Unit Composition

Bennington and similar soils: 80 percent
Contrasting components:
Cardington soils: 10 percent
Pewamo soils: 5 percent
Centerburg soils: 3 percent
Marengo soils: 2 percent

Soil Properties and Qualities

Available water capacity: About 8.3 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 0.5 foot to 1.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Somewhat poorly drained

Flooding: None
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Till
Permeability: Very slow or slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- The root system of winter grain crops may be damaged by frost action.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Subsurface drainage can lower the seasonal high water table.

Pastureland

- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- The root system of plants may be damaged by frost action.
- Restricting grazing during wet periods can minimize compaction.

Forestland

- A seasonal high water table can inhibit the growth of some species of seedlings by restricting root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Soil wetness may limit the use of this soil by log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

- The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
- Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Not hydric

BeB—Bennington silt loam, 2 to 6 percent slopes

Setting

Landform: Slight rises on Wisconsinan till plains
Position on the landform: Summits and shoulders

Map Unit Composition

Bennington and similar soils: 80 percent
Contrasting components:
Cardington soils: 10 percent
Pewamo soils: 5 percent

Centerburg soils: 3 percent
Marengo soils: 2 percent

Soil Properties and Qualities

Available water capacity: About 7.6 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 0.5 foot to 1.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Till
Permeability: Very slow or slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- The root system of winter grain crops may be damaged by frost action.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Subsurface drainage can lower the seasonal high water table.

Pastureland

- Erosion control is needed when pastures are renovated.
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- The root system of plants may be damaged by frost action.
- Restricting grazing during wet periods can minimize compaction.

Forestland

- A seasonal high water table can inhibit the growth of some species of seedlings by restricting root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Soil wetness may limit the use of this soil by log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

- The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
- Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- The low bearing strength of this soil is generally

unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Not hydric

BkF—Berks channery silt loam, 40 to 70 percent slopes

Setting

Landform: Hills
Position on the landform: Backslopes

Map Unit Composition

Berks and similar soils: 80 percent
Contrasting components:
Shelocta soils: 15 percent
Cruze soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 1.9 inches to a depth of 25 inches
Cation-exchange capacity in the surface layer: 5 to 15 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 18 to 38 inches to bedrock (paralithic); 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Residuum
Permeability: Moderate or moderately rapid
Potential for frost action: Low
Shrink-swell potential: Low
Texture of the surface layer: Channery silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Pastureland

- This soil is generally not recommended for pasture.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is not practical. Also, the use of mechanical planting equipment is not practical.
- Rock fragments obstruct the use of mechanical planting equipment.
- Stones restrict the use of equipment during site preparation for planting or seeding.
- Burning may destroy organic matter and increase sedimentation.

Building site development

- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
- The nature and depth of the soft bedrock in this soil reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.
- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 7e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: H-1
Hydric classification: Not hydric

CaB—Cardington silt loam, 2 to 6 percent slopes

Setting

Landform: Slight rises on Wisconsinan till plains
Position on the landform: Summits

Map Unit Composition

Cardington and similar soils: 85 percent
Contrasting components:
Bennington soils: 10 percent
Pewamo soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 7.9 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Slow or moderately slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of

excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

CaB2—Cardington silt loam, 2 to 6 percent slopes, eroded

Setting

Landform: Slight rises on Wisconsinan till plains
Position on the landform: Shoulders and summits

Map Unit Composition

Cardington and similar soils: 85 percent
Contrasting components:
Bennington soils: 10 percent
Pewamo soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 7.6 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Slow or moderately slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures

may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

CaC2—Cardington silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Backslopes, shoulders, and footslopes

Map Unit Composition

Cardington and similar soils: 90 percent
Contrasting components:
Bennington soils: 5 percent
Pewamo soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 7.7 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Slow or moderately slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Very high
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is

poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

CaD2—Cardington silt loam, 12 to 20 percent slopes, eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Backslopes and footslopes

Map Unit Composition

Cardington and similar soils: 80 percent
Contrasting components:
Amanda soils: 10 percent
Loudonville soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 7.8 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Slow or moderately slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Very high
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic

matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

Cb—Carlisle muck

Setting

Landform: Flats and depressions on till plains, outwash terraces, and lake plains

Map Unit Composition

Carlisle and similar soils: 90 percent
Contrasting components:
Patton soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 23.9 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 150 to 230 milliequivalents per 100 grams
Depth class: Very deep

Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0.0 to 0.5 foot
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 70 to 99 percent
Parent material: Herbaceous organic material and/or woody organic material
Permeability: Moderately slow to moderately rapid
Potential for frost action: High
Shrink-swell potential: Not rated
Texture of the surface layer: Muck
Surface runoff class: Negligible
Hazard of wind erosion: Severe

Use and Management Considerations

Cropland

• Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• A combination of surface and subsurface drainage helps to remove excess water.
• Subsidence or shrinkage of the muck causes displacement of subsurface drains.
• Control of the water table can minimize subsidence, help to prevent burning, and reduce the hazard of wind erosion.
• The soil may be deficient in micronutrients because of the high content of organic matter.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low pH in the soil may cause a nutrient imbalance in seedlings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness limits the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• When this soil is drained, the organic layers subside. Subsidence leads to differential rates of settlement, which may cause foundations to break. Because of the high potential for subsidence, this soil is generally unsuited to building site development.
• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Subsidence of the organic material reduces the bearing capacity of this soil.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Interpretive Groups

Land capability classification: 3w
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: D-1
Hydric classification: Hydric

CdF—Cedarfalls-Rock outcrop complex, 40 to 70 percent slopes

Setting

Landform: Hills (fig. 12)
Position on the landform: Backslopes

Map Unit Composition

Cedarfalls and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting components:
Germano soils: 10 percent
Gilpin soils: 10 percent

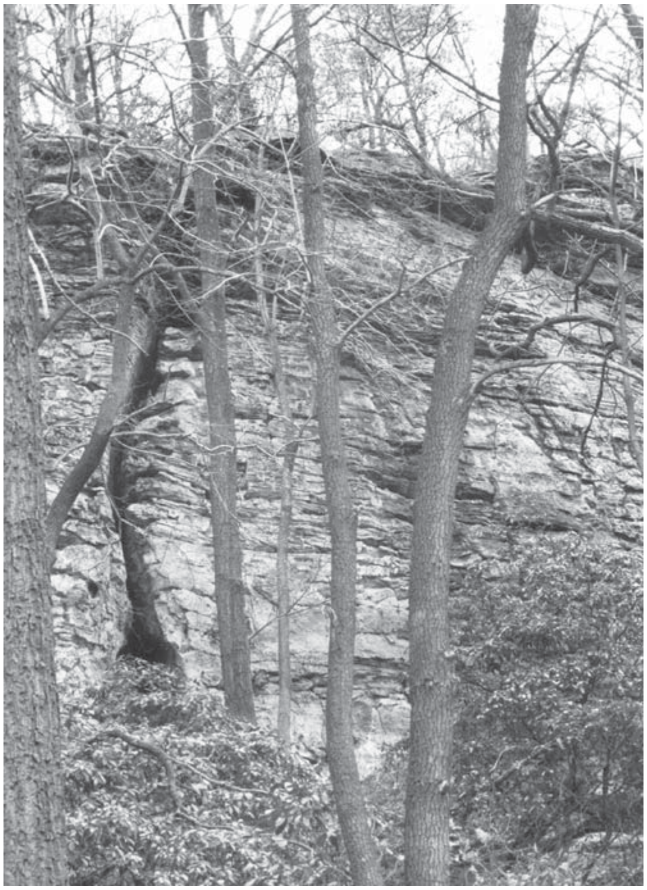

Figure 12.—An area of Cedarfalls-Rock outcrop complex, 40 to 70 percent slopes, in the Christmas Rock State Nature Preserve.

Soil Properties and Qualities

Cedarfalls

Available water capacity: About 4.2 inches to a depth of 57 inches
Cation-exchange capacity in the surface layer: 4 to 15 milliequivalents per 100 grams
Depth class: Deep
Depth to root-restrictive feature: 40 to 60 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Colluvium
Permeability: Rapid
Potential for frost action: Low
Shrink-swell potential: Low
Texture of the surface layer: Coarse sandy loam
Surface runoff class: Low
Hazard of wind erosion: Moderate

Use and Management Considerations Affecting the Cedarfalls Soil

Pastureland

• This soil is generally not recommended for use as pasture.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• Sandy layers in this soil increase the maintenance of haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of the slope, the use of equipment for preparing sites for planting and seeding is not practical. Also, the use of mechanical planting equipment is not practical.
• Burning may destroy organic matter and increase sedimentation.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of properly installing the effluent distribution lines.
• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits

the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting Rock Outcrop

• Onsite investigation is needed to determine the suitability for specific uses in areas of Rock outcrop.

Interpretive Groups

Land capability classification: 7s
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Cedarfalls—H-1
Hydric classification: Cedarfalls—not hydric

CeB—Celina silt loam, 2 to 6 percent slopes

Setting

Landform: Slight rises on Wisconsinan till plains
Position on the landform: Summits

Map Unit Composition

Celina and similar soils: 80 percent
Contrasting components:
Crosby soils: 10 percent
Kokomo soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 6.8 inches to a depth of 36 inches
Cation-exchange capacity in the surface layer: 9 to 19 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to dense material
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till
Permeability: Moderately slow above the dense till and very slow in the dense till
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• The rooting depth of crops is restricted by dense soil material.

Pastureland

• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result

in the need for a higher degree of construction site development and building maintenance.
- Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

CfB—Centerburg silt loam, 2 to 6 percent slopes

Setting

Landform: Slight rises on Wisconsinan till plains
Position on the landform: Summits

Map Unit Composition

Centerburg and similar soils: 80 percent
Contrasting components:
Bennington soils: 10 percent
Marengo soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 9.9 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1 to 2 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- The root system of winter grain crops may be damaged by frost action.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Subsurface drainage can lower the seasonal high water table.

Pastureland

- Erosion control is needed when pastures are renovated.
- The root system of plants may be damaged by frost action.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

CfB2—Centerburg silt loam, 2 to 6 percent slopes, eroded

Setting

Landform: Slight rises on Wisconsinan till plains
Position on the landform: Summits and shoulders

Map Unit Composition

Centerburg and similar soils: 80 percent
Contrasting components:
Bennington soils: 10 percent
Marengo soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 9.3 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1 to 2 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.

- The root system of winter grain crops may be damaged by frost action.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Subsurface drainage can lower the seasonal high water table.

Pastureland

- Erosion control is needed when pastures are renovated.
- The root system of plants may be damaged by frost action.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Soil wetness may limit the use of this soil by log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

- The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
- Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

CfC2—Centerburg silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Backslopes, footslopes, and shoulders

Map Unit Composition

Centerburg and similar soils: 80 percent
Contrasting components:
Bennington soils: 10 percent
Marengo soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 7.9 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1 to 2 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum

Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Subsurface drainage can lower the seasonal high water table.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

Cg—Chagrin silt loam, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Chagrin and similar soils: 80 percent
Contrasting components:
Beaucoup soils: 10 percent
Newark soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 9.8 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 24 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 4 to 6 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Well drained
Frequency of flooding: Frequent
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Alluvium
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Winter grain crops are commonly not grown because of frequent flooding.
- Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.

Pastureland

- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Flooding may result in damage to haul roads and increased maintenance costs.
- Flooding restricts the safe use of roads by log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

- The frequent flooding in areas of this soil greatly increases the risk of damage associated with floodwaters. Because of the flooding, this soil is generally unsuited to building site development.
- Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

- This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where protected from flooding or not frequently flooded during the growing season
Pasture and hayland suitability group: A-5
Hydric classification: Not hydric

CkC2—Cincinnati silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: Illinoian till plains
Position on the landform: Footslopes, shoulders, and backslopes

Map Unit Composition

Cincinnati and similar soils: 80 percent
Contrasting components:
Alford soils: 5 percent
Hickory soils: 5 percent
Jeneva soils: 5 percent
Wellston soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 5.5 inches to a depth of 29 inches
Cation-exchange capacity in the surface layer: 7 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 22 to 36 inches to a fragipan
Depth to the top of the seasonal high water table: 2 to 3 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Parent material: Loess over till
Permeability: Moderate above the fragipan and slow or moderately slow in and below the fragipan
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• The rooting depth of crops is restricted by dense soil material.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• A loss of soil productivity may occur following an episode of fire.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures

may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: F-3
Hydric classification: Not hydric

CmC2—Cincinnati-Wellston complex, 6 to 12 percent slopes, eroded

Setting

Landform: Illinoian till plains
Position on the landform: Shoulders and footslopes

Map Unit Composition

Cincinnati and similar soils: 40 percent
Wellston and similar soils: 40 percent
Contrasting components:
 Alford soils: 5 percent
 Cruze soils: 5 percent
 Gilpin soils: 5 percent
 Hickory soils: 5 percent

Soil Properties and Qualities

Cincinnati

Available water capacity: About 4.9 inches to a depth of 29 inches
Cation-exchange capacity in the surface layer: 7 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 22 to 36 inches to a fragipan
Depth to the top of the seasonal high water table: 2 to 3 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Parent material: Loess over till
Permeability: Moderate above the fragipan and slow or moderately slow in and below the fragipan
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Wellston

Available water capacity: About 9 inches to a depth of 48 inches
Cation-exchange capacity in the surface layer: 8 to 16 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 40 to 72 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over residuum
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Cincinnati Soil

Cropland

- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- The root system of winter grain crops may be damaged by frost action.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- The rooting depth of crops is restricted by dense soil material.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• Burning may destroy organic matter.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Wellston Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of properly installing the effluent distribution lines.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Cincinnati—F-3; Wellston—A-6
Hydric classification: Cincinnati—not hydric; Wellston—not hydric

Cn—Condit silt loam

Setting

Landform: Flats and depressions on Wisconsinan till plains

Map Unit Composition

Condit and similar soils: 80 percent
Contrasting components:
Bennington soils: 5 percent
Cardington soils: 5 percent
Pewamo soils: 5 percent
Marengo soils: 3 percent
Centerburg soils: 2 percent

Soil Properties and Qualities

Available water capacity: About 7.4 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 5 to 10 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Perched
Ponding duration: Long
Depth of ponding: 0 to 1 foot
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Till
Permeability: Very slow or slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• A combination of surface and subsurface drainage helps to remove excess water.
• The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 3w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Hydric

CoB—Corwin silt loam, 2 to 6 percent slopes

Setting

Landform: Slight rises on Wisconsinan till plains
Position on the landform: Summits

Map Unit Composition

Corwin and similar soils: 80 percent
Contrasting components:
Amanda soils: 5 percent
Kokomo soils: 5 percent
Marengo soils: 5 percent
Miamian soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 6.4 inches to a depth of 38 inches
Cation-exchange capacity in the surface layer: 10 to 24 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 24 to 40 inches to dense material
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Loess over till
Permeability: Moderate above the dense till and very slow or slow in the dense till
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• The rooting depth of crops is restricted by dense soil material.

Pastureland

• Erosion control is needed when pastures are renovated.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

CrA—Crosby silt loam, 0 to 2 percent slopes

Setting

Landform: Flats on Wisconsinan till plains
Position on the landform: Summits

Map Unit Composition

Crosby and similar soils: 85 percent
Contrasting components:
Celina soils: 5 percent
Kokomo soils: 5 percent
Miamian soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 5.9 inches to a depth of 38 inches
Cation-exchange capacity in the surface layer: 6 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to dense material
Depth to the top of the seasonal high water table: 0.5 foot to 1.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till

Permeability: Moderate or moderately slow in and above the argillic horizon and very slow or slow below the argillic horizon
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Subsurface drainage can lower the seasonal high water table.
• The rooting depth of crops is restricted by dense soil material.

Pastureland

• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Not hydric

CsA—Canal silt loam, 0 to 2 percent slopes

Setting

Landform: Flats on lake plains
Position on the landform: Summits

Map Unit Composition

Canal and similar soils: 90 percent
Contrasting components:
Glenford soils: 5 percent
Patton soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 9.1 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 0.5 foot to 1.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Glaciolacustrine deposits
Permeability: Very slow or slow
Potential for frost action: High
Shrink-swell potential: High
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Subsurface drainage can lower the seasonal high water table.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Not hydric

Ee—Eel silt loam, gravelly substratum, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Eel and similar soils: 85 percent
Contrasting components:
Aetna soils: 5 percent
Beaucoup soils: 5 percent
Stonelick soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 11.1 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1.5 to 2.0 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Moderately well drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 2 to 3 percent
Parent material: Alluvium
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
• Small grain crops may be damaged by flooding in winter and spring.

Pastureland

• Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
• Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Flooding may result in damage to haul roads and increased maintenance costs.
• Soil wetness may limit the use of this soil by log trucks.
• Flooding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.

Septic tank absorption fields

• This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-5
Hydric classification: Not hydric

EkA—Eldean silt loam, 0 to 2 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Eldean and similar soils: 80 percent
Contrasting components:
Ockley soils: 10 percent
Thackery soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 4.4 inches to a depth of 34 inches
Cation-exchange capacity in the surface layer: 8 to 21 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderately slow or moderate in the solum and rapid or very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• The rooting depth of crops may be restricted by the high clay content.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• Rock fragments obstruct the use of mechanical planting equipment.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

• This soil is well suited to use as a site for buildings.

Septic tank absorption fields

• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2s
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: B-1
Hydric classification: Not hydric

EkB—Eldean silt loam, 2 to 6 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Eldean and similar soils: 80 percent
Contrasting components:
Ockley soils: 10 percent
Thackery soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 4.5 inches to a depth of 35 inches
Cation-exchange capacity in the surface layer: 8 to 21 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderately slow or moderate in the solum and rapid or very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

• Rock fragments obstruct the use of mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: B-1
Hydric classification: Not hydric

EnC2—Eldean gravelly loam, 6 to 12 percent slopes, eroded

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Risers

Map Unit Composition

Eldean and similar soils: 85 percent
Contrasting components:
Casco soils: 5 percent
Ockley soils: 5 percent
Rodman soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 4.2 inches to a depth of 34 inches
Cation-exchange capacity in the surface layer: 8 to 22 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderately slow or moderate in the solum and rapid or very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Gravelly loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• The rooting depth of crops may be restricted by the high clay content.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• Rock fragments obstruct the use of mechanical planting equipment.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: B-1
Hydric classification: Not hydric

Eu—Euclid silt loam, rarely flooded

Setting

Landform: Flats on lake plains and low stream terraces
Position on the landform: Summits and treads

Map Unit Composition

Euclid and similar soils: 85 percent
Contrasting components:
Beaucoup soils: 5 percent
Gessie soils: 5 percent
Patton soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 10.5 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1.0 to 2.5 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Frequency of flooding: Rare
Content of organic matter in the surface layer: 2 to 3 percent

Parent material: Silty glaciolacustrine deposits
Permeability: Moderate in the surface layer and moderately slow in the subsoil and substratum
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- The root system of winter grain crops may be damaged by frost action.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Subsurface drainage can lower the seasonal high water table.

Pastureland

- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- The root system of plants may be damaged by frost action.
- Restricting grazing during wet periods can minimize compaction.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Soil wetness may limit the use of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

- Under unusual weather conditions, this soil is subject to rare flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.

Septic tank absorption fields

- This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Not hydric

FbA—Fitchville silt loam, 0 to 2 percent slopes

Setting

Landform: Flats on lake plains and stream terraces
Position on the landform: Summits and treads

Map Unit Composition

Fitchville and similar soils: 85 percent
Contrasting components:
Glenford soils: 10 percent
Patton soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 10.4 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 14 to 22 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 foot
Kind of water table: Apparent

Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Content of organic matter in the surface layer: 2 to 3 percent
Parent material: Silty glaciolacustrine deposits
Permeability: Moderately slow in the subsoil and moderate or moderately slow in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Subsurface drainage can lower the seasonal high water table.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Not hydric

FhA—Fox loam, 0 to 2 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Fox and similar soils: 80 percent
Contrasting components:
Gallman soils: 10 percent
Thackery soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 5.8 inches to a depth of 35 inches
Cation-exchange capacity in the surface layer: 4 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate in the loamy mantle and rapid or very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.

Pastureland

• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• Rock fragments obstruct the use of mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Interpretive Groups

Land capability classification: 2s
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

FhB—Fox loam, 2 to 6 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Fox and similar soils: 80 percent
Contrasting components:
Gallman soils: 10 percent
Thackery soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 5.6 inches to a depth of 33 inches
Cation-exchange capacity in the surface layer: 4 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate in the loamy mantle and rapid or very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.

Pastureland

- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- Rock fragments obstruct the use of mechanical planting equipment.

Building site development

- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.
- This soil is well suited to use as a site for buildings.

Septic tank absorption fields

- The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
- The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local roads and streets

- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

FhC2—Fox loam, 6 to 12 percent slopes, eroded

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Risers

Map Unit Composition

Fox and similar soils: 80 percent

Contrasting components:
Amanda soils: 10 percent
Ockley soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 5 inches to a depth of 30 inches
Cation-exchange capacity in the surface layer: 4 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate in the loamy mantle and rapid or very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• Rock fragments obstruct the use of mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Because of shrinking and swelling, this soil may not

be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

FhD2—Fox loam, 12 to 20 percent slopes, eroded

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Risers

Map Unit Composition

Fox and similar soils: 80 percent
Contrasting components:
Amanda soils: 10 percent
Ockley soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 5.3 inches to a depth of 33 inches
Cation-exchange capacity in the surface layer: 4 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate in the loamy mantle and rapid or very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Sandy layers in this soil increase the maintenance of haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting

equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

FmA—Fox silt loam, 0 to 2 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Fox and similar soils: 80 percent
Contrasting components:
  Thackery soils: 10 percent
  Gallman soils: 5 percent
  Wea soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 5.7 inches to a depth of 34 inches
Cation-exchange capacity in the surface layer: 4 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate in the loamy mantle and rapid or very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.
• This soil is well suited to use as a site for buildings.

Septic tank absorption fields

• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Interpretive Groups

Land capability classification: 2s
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

FmB—Fox silt loam, 2 to 6 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Fox and similar soils: 85 percent
Contrasting components:
Gallman soils: 5 percent
Thackery soils: 5 percent
Wea soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 6.3 inches to a depth of 37 inches
Cation-exchange capacity in the surface layer: 4 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate in the loamy mantle and rapid or very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and

fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.
• This soil is well suited to use as a site for buildings.

Septic tank absorption fields

• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

GaB—Gallman silt loam, loamy substratum, 2 to 6 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Summits

Map Unit Composition

Gallman and similar soils: 85 percent
Contrasting components:
Amanda soils: 5 percent
Glenford soils: 5 percent
Marengo soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 7.7 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 8 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash over till
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Careful selection and application of chemicals and

fertilizers can help to minimize the possibility of ground-water contamination.

- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

- Erosion control is needed when pastures are renovated.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

- This soil is well suited to use as a site for buildings.

Septic tank absorption fields

- This soil is well suited to use as a site for septic tank absorption fields.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

GcD—Germano sandy loam, 15 to 25 percent slopes

Setting

Landform: Hills
Position on the landform: Footslopes and backslopes

Map Unit Composition

Germano and similar soils: 80 percent
Contrasting components:
Cedarfalls soils: 10 percent
Shelocta soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 3.5 inches to a depth of 28 inches
Cation-exchange capacity in the surface layer: 10 to 15 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 18 to 38 inches to bedrock (paralithic); 20 to 43 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 3.0 percent
Parent material: Residuum
Permeability: Moderately rapid
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Sandy loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.

• This soil provides poor summer pasture.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Bedrock may interfere with the construction of haul roads and log landing sites.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• The slope may restrict the use of some mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.
• Burning may destroy organic matter.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• The nature and depth of the soft bedrock in this soil reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: F-1
Hydric classification: Not hydric

GcE—Germano sandy loam, 25 to 40 percent slopes

Setting

Landform: Hills
Position on the landform: Backslopes

Map Unit Composition

Germano and similar soils: 80 percent
Contrasting components:
Cedarfalls soils: 10 percent
Shelocta soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 4.1 inches to a depth of 38 inches
Cation-exchange capacity in the surface layer: 10 to 15 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 18 to 38 inches to bedrock (paralithic); 20 to 49 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 3.0 percent
Parent material: Residuum
Permeability: Moderately rapid
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Sandy loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• The slope may restrict the use of some farm equipment.

• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of the slope, the use of mechanical planting equipment is not practical.
• The slope restricts the use of equipment for preparing sites for planting and seeding.
• Burning may destroy organic matter.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• The nature and depth of the soft bedrock in this soil reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 6e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: F-2
Hydric classification: Not hydric

GdF—Germano-Rock outcrop complex, 40 to 70 percent slopes

Setting

Landform: Hills
Position on the landform: Backslopes

Map Unit Composition

Germano and similar soils: 70 percent
Rock outcrop: 15 percent
Contrasting components:
Cedarfalls soils: 5 percent
Gilpin soils: 5 percent
Shelocta soils: 5 percent

Soil Properties and Qualities

Germano

Available water capacity: About 3.1 inches to a depth of 32 inches
Cation-exchange capacity in the surface layer: 10 to 15 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 18 to 38 inches to bedrock (paralithic); 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 3.0 percent
Parent material: Residuum
Permeability: Moderately rapid
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Channery sandy loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Germano Soil

Pastureland

• This soil is generally not recommended for pasture.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of the slope, the use of equipment for preparing sites for planting and seeding is not practical. Also, the use of mechanical planting equipment is not practical.
• Rock fragments obstruct the use of mechanical planting equipment.
• Burning may destroy organic matter and increase sedimentation.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• The nature and depth of the soft bedrock in this soil reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting Rock Outcrop

• Onsite investigation is needed to determine the suitability for specific uses in areas of Rock outcrop.

Interpretive Groups

Land capability classification: 7e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Germano—H-1
Hydric classification: Germano—not hydric

Gf—Gessie silt loam, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Gessie and similar soils: 80 percent
Contrasting components:
Beaucoup soils: 10 percent
Shoals soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 9.5 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 9 to 22 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Frequency of flooding: Occasional (fig. 13)
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loamy alluvium
Permeability: Moderate in the solum and moderate or moderately rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Controlling traffic can minimize soil compaction.

Figure 13.—Flooding along the Hocking River in an area of Gessie silt loam, occasionally flooded. Germano sandy loam, 25 to 40 percent slopes, is in the wooded area in the background.

• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
• Small grain crops may be damaged by flooding in winter and spring.

Pastureland

• Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
• Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Flooding may result in damage to haul roads and increased maintenance costs.
• Flooding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.
• Because of the high content of sand or gravel in the

soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-5
Hydric classification: Not hydric

Gg—Gessie silt loam, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Gessie and similar soils: 80 percent
Contrasting components:
Beaucoup soils: 10 percent
Shoals soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 9.7 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 9 to 22 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Frequency of flooding: Frequent
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loamy alluvium
Permeability: Moderate in the solum and moderate or moderately rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Winter grain crops are commonly not grown because of frequent flooding.
• Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.

Pastureland

• Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
• Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Flooding may result in damage to haul roads and increased maintenance costs.
• Flooding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• The frequent flooding in areas of this soil greatly increases the risk of damage associated with floodwaters. Because of the flooding, this soil is generally unsuited to building site development.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil

greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where protected from flooding or not frequently flooded during the growing season
Pasture and hayland suitability group: A-5
Hydric classification: Not hydric

GkC—Gilpin silt loam, 6 to 15 percent slopes

Setting

Landform: Hills
Position on the landform: Shoulders and summits

Map Unit Composition

Gilpin and similar soils: 75 percent
Contrasting components:
Berks soils: 10 percent
Wellston soils: 10 percent
Germano soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 4.9 inches to a depth of 36 inches
Cation-exchange capacity in the surface layer: 7 to 18 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 4.0 percent
Parent material: Residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- The rooting depth of crops is restricted by bedrock.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.
- The rooting depth of plants may be restricted by bedrock.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Bedrock may interfere with the construction of haul roads and log landing sites.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting

equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• Rock fragments obstruct the use of mechanical planting equipment.

Building site development

• The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: F-1
Hydric classification: Not hydric

GkD—Gilpin silt loam, 15 to 25 percent slopes

Setting

Landform: Hills
Position on the landform: Footslopes and shoulders

Map Unit Composition

Gilpin and similar soils: 75 percent
Contrasting components:
Berks soils: 10 percent
Wellston soils: 10 percent
Germano soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 4.1 inches to a depth of 29 inches
Cation-exchange capacity in the surface layer: 7 to 18 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 4.0 percent
Parent material: Residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The rooting depth of crops is restricted by bedrock.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The rooting depth of plants may be restricted by bedrock.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Bedrock may interfere with the construction of haul roads and log landing sites.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• Rock fragments obstruct the use of mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: F-1
Hydric classification: Not hydric

GnB—Glenford silt loam, 2 to 6 percent slopes

Setting

Landform: Lake plains and stream terraces
Position on the landform: Summits and treads

Map Unit Composition

Glenford and similar soils: 90 percent
Contrasting components:
Fitchville soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 9.7 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1 to 2 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Silty glaciolacustrine deposits
Permeability: Moderate or moderately slow in the upper part of the subsoil and moderately slow in the lower part of the subsoil and in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Subsurface drainage can lower the seasonal high water table.

Pastureland

• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

GnC2—Glenford silt loam, 6 to 15 percent slopes, eroded

Setting

Landform: Lake plains and stream terraces
Position on the landform: Backslopes and risers

Map Unit Composition

Glenford and similar soils: 90 percent
Contrasting components:
Fitchville soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 9.2 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1 to 2 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Silty glaciolacustrine deposits

Permeability: Moderate or moderately slow in the upper part of the subsoil and moderately slow in the lower part of the subsoil and in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Subsurface drainage can lower the seasonal high water table.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

HhC2—Hickory silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: Illinoian till plains
Position on the landform: Shoulders, backslopes, and footslopes

Map Unit Composition

Hickory and similar soils: 80 percent
Contrasting components:
Gilpin soils: 10 percent
Loudonville soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 10.3 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 14 to 19 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 2 percent
Parent material: Till
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- Burning may destroy organic matter.

Building site development

- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local roads and streets

- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

HkE—Hickory-Germano complex, 20 to 35 percent slopes

Setting

Landform: Illinoian till plains
Position on the landform: Backslopes

Map Unit Composition

Hickory and similar soils: 45 percent
Germano and similar soils: 35 percent
Contrasting components:
Glenford soils: 10 percent
Negley soils: 10 percent

Soil Properties and Qualities

Hickory

Available water capacity: About 10 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 14 to 19 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 2 percent
Parent material: Till
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Loam
Surface runoff class: High
Hazard of wind erosion: Slight

Germano

Available water capacity: About 4.2 inches to a depth of 40 inches
Cation-exchange capacity in the surface layer: 5 to 10 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 18 to 41 inches to bedrock (paralithic); 20 to 44 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 3.0 percent
Parent material: Residuum
Permeability: Moderately rapid
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Sandy loam
Surface runoff class: Medium
Hazard of wind erosion: Moderate

Use and Management Considerations Affecting the Hickory Soil

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• The slope may restrict the use of some farm equipment.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• Because of the slope, the use of mechanical planting equipment is not practical.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

• Burning may destroy organic matter.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Germano Soil

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• The slope may restrict the use of some farm equipment.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of the slope, the use of mechanical planting equipment is not practical.
• Rock fragments obstruct the use of mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.
• Burning may destroy organic matter.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 6e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Hickory—A-3; Germano—F-2
Hydric classification: Hickory—not hydric; Germano—not hydric

HmD2—Hickory-Gilpin complex, 12 to 20 percent slopes, eroded

Setting

Landform: Illinoian till plains
Position on the landform: Backslopes and footslopes

Map Unit Composition

Hickory and similar soils: 50 percent
Gilpin and similar soils: 30 percent
Contrasting components:
Alford soils: 5 percent
Berks soils: 5 percent
Cincinnati soils: 5 percent
Cruze soils: 5 percent

Soil Properties and Qualities

Hickory

Available water capacity: About 10.1 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 14 to 19 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 2 percent
Parent material: Till
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Gilpin

Available water capacity: About 3.7 inches to a depth of 29 inches
Cation-exchange capacity in the surface layer: 7 to 18 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 4.0 percent
Parent material: Residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Hickory Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

• The slope restricts the use of equipment for preparing sites for planting and seeding.
• Burning may destroy organic matter.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Gilpin Soil

Cropland

• The rooting depth of crops is restricted by bedrock.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The rooting depth of plants may be restricted by bedrock.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Bedrock may interfere with the construction of haul roads and log landing sites.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• Rock fragments obstruct the use of mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building

practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Hickory—A-1; Gilpin—F-1
Hydric classification: Hickory—not hydric; Gilpin—not hydric

HnC2—Homewood silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: Illinoian till plains
Position on the landform: Summits and shoulders

Map Unit Composition

Homewood and similar soils: 80 percent
Contrasting components:
Cincinnati soils: 10 percent
Gilpin soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 4.6 inches to a depth of 25 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 16 to 33 inches to a fragipan
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till
Permeability: Moderate above the fragipan and very slow or slow in the fragipan
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• The rooting depth of crops is restricted by dense soil material.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting

equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: F-3
Hydric classification: Not hydric

HoD2—Homewood-Gilpin complex, 12 to 20 percent slopes, eroded

Setting

Landform: Illinoian till plains
Position on the landform: Backslopes, footslopes, and shoulders

Map Unit Composition

Homewood and similar soils: 50 percent
Gilpin and similar soils: 30 percent
Contrasting components:
Alford soils: 5 percent
Berks soils: 5 percent
Cincinnati soils: 5 percent
Cruze soils: 5 percent

Soil Properties and Qualities

Homewood

Available water capacity: About 4.8 inches to a depth of 25 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 16 to 33 inches to a fragipan
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till
Permeability: Moderate above the fragipan and very slow or slow in the fragipan
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Gilpin

Available water capacity: About 4.2 inches to a depth of 29 inches
Cation-exchange capacity in the surface layer: 7 to 18 milliequivalents per 100 grams
Depth class: Moderately deep

Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 4.0 percent
Parent material: Residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Homewood Soil

Cropland

- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- The rooting depth of crops is restricted by dense soil material.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

- The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
- Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
- Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Gilpin Soil

Cropland

- The rooting depth of crops is restricted by bedrock.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.
- The rooting depth of plants may be restricted by bedrock.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Bedrock may interfere with the construction of haul roads and log landing sites.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Rock fragments obstruct the use of mechanical planting equipment.
- The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

- The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

- The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Homewood—F-3; Gilpin—F-1
Hydric classification: Homewood—not hydric; Gilpin—not hydric

HoE2—Homewood-Gilpin complex, 20 to 35 percent slopes, eroded

Setting

Landform: Illinoian till plains
Position on the landform: Backslopes

Map Unit Composition

Homewood and similar soils: 50 percent
Gilpin and similar soils: 30 percent
Contrasting components:
Alford soils: 5 percent
Berks soils: 5 percent
Cincinnati soils: 5 percent
Cruze soils: 5 percent

Soil Properties and Qualities

Homewood

Available water capacity: About 4.7 inches to a depth of 25 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 16 to 33 inches to a fragipan
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till
Permeability: Moderate above the fragipan and very slow or slow in the fragipan
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Gilpin

Available water capacity: About 4.1 inches to a depth of 29 inches
Cation-exchange capacity in the surface layer: 7 to 18 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 4.0 percent
Parent material: Residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Homewood Soil

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- The slope may restrict the use of some farm equipment.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.

• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• Because of the slope, the use of mechanical planting equipment is not practical.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Gilpin Soil

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• The slope may restrict the use of some farm equipment.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The rooting depth of plants may be restricted by bedrock.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• Because of the slope, the use of mechanical planting equipment is not practical.
• Rock fragments obstruct the use of mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The depth to bedrock and hardness of the bedrock

greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 6e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Homewood—F-4; Gilpin—F-2
Hydric classification: Homewood—not hydric; Gilpin—not hydric

JeB—Jeneva silt loam, 2 to 6 percent slopes

Setting

Landform: Illinoian till plains
Position on the landform: Shoulders and summits

Map Unit Composition

Jeneva and similar soils: 85 percent
Contrasting components:
Cincinnati soils: 10 percent
Alford soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 11.5 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 2.0 to 3.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till
Permeability: Moderately slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

Km—Kokomo silt loam, overwash

Setting

Landform: Flats and depressions on Wisconsinan till plains

Map Unit Composition

Kokomo and similar soils: 80 percent
Contrasting components:
Celina soils: 10 percent
Crosby soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 10.5 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 14 to 29 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0 to 2 feet
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 3 to 6 percent
Parent material: Till
Permeability: Moderately slow or slow in the loamy material and slow in the underlying till
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• The rooting depth of crops may be restricted by the high clay content.
• A combination of surface and subsurface drainage helps to remove excess water.
• Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Hydric

Ko—Kokomo silty clay loam

Setting

Landform: Flats and depressions on Wisconsinan till plains

Map Unit Composition

Kokomo and similar soils: 80 percent
Contrasting components:
Celina soils: 10 percent
Crosby soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 9.8 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 16 to 33 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0 to 2 feet
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 3 to 6 percent
Parent material: Till
Permeability: Very slow or slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silty clay loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• A combination of surface and subsurface drainage helps to remove excess water.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting

equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.
• A loss of soil productivity may occur following an episode of fire.

Building site development

• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Hydric

Lk—Lindside silt loam, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Lindside and similar soils: 75 percent
Contrasting components:
Euclid: 10 percent
Newark soils: 10 percent
Beaucoup soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 11.3 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 15 to 30 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Moderately well drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Silty alluvium
Permeability: Moderately slow or moderate
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
• Small grain crops may be damaged by flooding in winter and spring.

Pastureland

• Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
• Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation

of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Flooding may result in damage to haul roads and increased maintenance costs and restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.

Septic tank absorption fields

• This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-5
Hydric classification: Not hydric

LtC2—Loudonville-Steinsburg complex, 6 to 12 percent slopes, eroded

Setting

Landform: Glaciated hills
Position on the landform: Shoulders and summits

Map Unit Composition

Loudonville and similar soils: 50 percent
Steinsburg and similar soils: 40 percent
Contrasting components:
Amanda soils: 10 percent

Soil Properties and Qualities

Loudonville

Available water capacity: About 4.9 inches to a depth of 35 inches
Cation-exchange capacity in the surface layer: 6 to 22 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till over residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Severe

Steinsburg

Available water capacity: About 2.9 inches to a depth of 30 inches
Cation-exchange capacity in the surface layer: 8 to 12 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Residuum
Permeability: Moderately rapid
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Loam
Surface runoff class: Low
Hazard of wind erosion: Moderate

Use and Management Considerations Affecting the Loudonville Soil

Cropland

• The rooting depth of crops is restricted by bedrock.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The rooting depth of plants may be restricted by bedrock.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Bedrock may interfere with the construction of haul roads and log landing sites.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Steinsburg Soil

Cropland

• The rooting depth of crops is restricted by bedrock.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The rooting depth of plants may be restricted by bedrock.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Bedrock may interfere with the construction of haul roads and log landing sites.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Loudonville—F-1; Steinsburg—F-1
Hydric classification: Loudonville—not hydric; Steinsburg—not hydric

LtD2—Loudonville-Steinsburg complex, 12 to 20 percent slopes, eroded

Setting

Landform: Glaciated hills
Position on the landform: Backslopes and footslopes

Map Unit Composition

Loudonville and similar soils: 50 percent
Steinsburg and similar soils: 40 percent
Contrasting components:
Amanda soils: 10 percent

Soil Properties and Qualities

Loudonville

Available water capacity: About 4.5 inches to a depth of 36 inches
Cation-exchange capacity in the surface layer: 6 to 22 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till over residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Steinsburg

Available water capacity: About 4.5 inches to a depth of 40 inches

Cation-exchange capacity in the surface layer: 8 to 12 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 43 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Residuum
Permeability: Moderately rapid
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Sandy loam
Surface runoff class: Low
Hazard of wind erosion: Moderate

Use and Management Considerations Affecting the Loudonville Soil

Cropland

- The rooting depth of crops is restricted by bedrock.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.
- The rooting depth of plants may be restricted by bedrock.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Bedrock may interfere with the construction of haul roads and log landing sites.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

- The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

- The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Steinsburg Soil

Cropland

- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Bedrock may interfere with the construction of haul roads and log landing sites.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Rock fragments obstruct the use of mechanical planting equipment.
- The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

- The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
- Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

- The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Loudonville—F-1; Steinsburg—B-1
Hydric classification: Loudonville—not hydric; Steinsburg—not hydric

LtE—Loudonville-Steinsburg complex, 20 to 35 percent slopes

Setting

Landform: Glaciated hills
Position on the landform: Backslopes

Map Unit Composition

Loudonville and similar soils: 40 percent
Steinsburg and similar soils: 30 percent
Contrasting components:
Amanda soils: 10 percent
Berks soils: 10 percent
Shelocta soils: 10 percent

Soil Properties and Qualities

Loudonville

Available water capacity: About 4.6 inches to a depth of 37 inches
Cation-exchange capacity in the surface layer: 6 to 22 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till over residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Steinsburg

Available water capacity: About 2 inches to a depth of 30 inches
Cation-exchange capacity in the surface layer: 8 to 12 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Residuum
Permeability: Moderately rapid
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Channery sandy loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Loudonville Soil

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• The slope may restrict the use of some farm equipment.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The rooting depth of plants may be restricted by bedrock.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• Because of the slope, the use of mechanical planting equipment is not practical.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock

reduce the ease of excavation and increase the difficulty of constructing roads.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Steinsburg Soil

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• The slope may restrict the use of some farm equipment.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The rooting depth of plants may be restricted by bedrock.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of the slope, the use of mechanical planting equipment is not practical.
• Rock fragments obstruct the use of mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.
• Burning may destroy organic matter.

Building site development

• The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 6e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Loudonville—F-2; Steinsburg—F-2
Hydric classification: Loudonville—not hydric; Steinsburg—not hydric

LtF—Loudonville-Steinsburg complex, 35 to 70 percent slopes

Setting

Landform: Glaciated hills
Position on the landform: Backslopes

Map Unit Composition

Loudonville and similar soils: 60 percent
Steinsburg and similar soils: 20 percent
Contrasting components:
Amanda soils: 10 percent
Cedarfalls soils: 10 percent

Soil Properties and Qualities

Loudonville

Available water capacity: About 6.2 inches to a depth of 38 inches
Cation-exchange capacity in the surface layer: 8 to 18 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained

Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till over residuum
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Loam
Surface runoff class: High
Hazard of wind erosion: Slight

Steinsburg

Available water capacity: About 2.2 inches to a depth of 17 inches
Cation-exchange capacity in the surface layer: 8 to 12 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Residuum
Permeability: Moderately rapid
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Sandy loam
Surface runoff class: Medium
Hazard of wind erosion: Moderate

Use and Management Considerations Affecting the Loudonville Soil

Pastureland

• This soil is generally not recommended for pasture.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• Because of the slope, the use of equipment for preparing sites for planting and seeding is not practical. Also, the use of mechanical planting equipment is not practical.
• Burning may destroy organic matter and increase sedimentation.

Building site development

• The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Steinsburg Soil

Pastureland

• This soil is generally not recommended for pasture.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.

• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of the slope, the use of equipment for preparing sites for planting and seeding is not practical. Also, the use of mechanical planting equipment is not practical.
• Burning may destroy organic matter and increase sedimentation.

Building site development

• The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 7e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Loudonville—H-1; Steinsburg—H-1
Hydric classification: Loudonville—not hydric; Steinsburg—not hydric

Ma—Marengo clay loam

Setting

Landform: Flats and depressions on Wisconsinan till plains

Map Unit Composition

Marengo and similar soils: 80 percent
Contrasting components:
Bennington soils: 10 percent
Centerburg soils: 5 percent
Corwin soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 10.6 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 20 to 35 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long (fig. 14)
Depth of ponding: 0 to 1 foot
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 4 to 8 percent
Parent material: Till
Permeability: Moderately slow or moderate
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Clay loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• A combination of surface and subsurface drainage helps to remove excess water.

Figure 14.—Tire tracks in a saturated area of Marengo clay loam.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Because water tends to pond on this soil, the period

when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Hydric

Mb—Marengo silt loam, overwash

Setting

Landform: Flats and depressions on Wisconsinan till plains

Map Unit Composition

Marengo and similar soils: 80 percent
Contrasting components:
Bennington soils: 10 percent
Corwin soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 11.5 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 16 to 30 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0 to 1 foot
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 4 to 8 percent
Parent material: Till
Permeability: Moderately slow or moderate
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• A combination of surface and subsurface drainage helps to remove excess water.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building

maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

- Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

- Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Hydric

McB—McGary silt loam, 2 to 6 percent slopes

Setting

Landform: Lake plains
Position on the landform: Summits

Map Unit Composition

McGary and similar soils: 80 percent
Contrasting components:
Montgomery soils: 10 percent
Cardington soils: 5 percent
Centerburg soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 9.4 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 5 to 14 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 0.5 foot to 1.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over glaciolacustrine deposits
Permeability: Very slow
Potential for frost action: High
Shrink-swell potential: High
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- The root system of winter grain crops may be damaged by frost action.
- Controlling traffic can minimize soil compaction.
- The rooting depth of crops may be restricted by the high clay content.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.
- Subsurface drainage can lower the seasonal high water table.
- Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

- Erosion control is needed when pastures are renovated.
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- The root system of plants may be damaged by frost action.
- Restricting grazing during wet periods can minimize compaction.

Forestland

- A seasonal high water table can inhibit the growth of some species of seedlings by restricting root respiration.
- The low strength of the soil may cause the formation

of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Soil wetness may limit the use of this soil by log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

- The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
- Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
- Severe shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.
- In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-2
Hydric classification: Not hydric

Me—Medway silt loam, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Medway and similar soils: 75 percent
Contrasting components:
Beaucoup soils: 10 percent
Gessie soils: 10 percent
Shoals soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 9.7 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 13 to 28 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Moderately well drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 3 to 6 percent
Parent material: Loamy alluvium
Permeability: Moderate in the solum and moderate or moderately rapid in the substratum
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- The root system of winter grain crops may be damaged by frost action.
- Careful selection and application of chemicals and

fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
• Small grain crops may be damaged by flooding in winter and spring.

Pastureland

• Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
• Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
• The root system of plants may be damaged by frost action.

Forestland

• Standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Flooding may result in damage to haul roads and increased maintenance costs.
• Flooding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-5
Hydric classification: Not hydric

MkB2—Miamian silt loam, 2 to 6 percent slopes, eroded

Setting

Landform: Slight rises on Wisconsinan till plains
Position on the landform: Summits and shoulders

Map Unit Composition

Miamian and similar soils: 85 percent
Contrasting components:
Crosby soils: 10 percent
Kokomo soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 5.4 inches to a depth of 32 inches
Cation-exchange capacity in the surface layer: 10 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to dense material
Depth to the top of the seasonal high water table: 2.5 to 3.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till
Permeability: Moderately slow in the solum and slow or very slow in the substratum

Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• The rooting depth of crops is restricted by dense soil material and the high clay content.

Pastureland

• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.
• This soil is well suited to use as a site for buildings.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

MkC2—Miamian silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Backslopes, footslopes, and shoulders

Map Unit Composition

Miamian and similar soils: 85 percent

Contrasting components:
Crosby soils: 10 percent
Kokomo soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 5.3 inches to a depth of 28 inches
Cation-exchange capacity in the surface layer: 10 to 18 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to dense material
Depth to the top of the seasonal high water table: 2.5 to 3.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till
Permeability: Moderately slow in the solum and slow or very slow in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• The rooting depth of crops is restricted by dense soil material and the high clay content.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of

the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

MmC3—Miamian-Thrifton complex, 6 to 12 percent slopes, severely eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Backslopes, footslopes, and shoulders

Map Unit Composition

Miamian and similar soils: 65 percent
Thrifton and similar soils: 25 percent
Contrasting components:
Crosby soils: 10 percent

Soil Properties and Qualities

Miamian

Available water capacity: About 4 inches to a depth of 25 inches
Cation-exchange capacity in the surface layer: 14 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to dense material
Depth to the top of the seasonal high water table: 2.5 to 3.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Parent material: Loess over till
Permeability: Moderately slow in the solum and slow or very slow in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silty clay loam
Surface runoff class: High
Hazard of wind erosion: Slight

Thrifton

Available water capacity: About 2.1 inches to a depth of 14 inches
Cation-exchange capacity in the surface layer: 14 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 10 to 20 inches to dense material
Depth to the top of the seasonal high water table: 1.5 to 3.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderately slow in the subsoil and slow in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Clay loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Miamian Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

• The rooting depth of crops is restricted by dense soil material.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.
• Burning may destroy organic matter.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Thrifton Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• Clods may form if the soil is tilled when wet.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• The rooting depth of crops is restricted by dense soil material.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

- The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
- Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Miamian—A-1; Thrifton—B-1
Hydric classification: Miamian—not hydric; Thrifton—not hydric

MmD3—Miamian-Thrifton complex, 12 to 20 percent slopes, severely eroded

Setting

Landform: Wisconsinan till plains
Position on the landform: Footslopes and backslopes

Map Unit Composition

Miamian and similar soils: 50 percent
Thrifton and similar soils: 40 percent
Contrasting components:
Crosby soils: 10 percent

Soil Properties and Qualities

Miamian

Available water capacity: About 4.2 inches to a depth of 27 inches
Cation-exchange capacity in the surface layer: 14 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to dense material
Depth to the top of the seasonal high water table: 2.5 to 3.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Parent material: Loess over till
Permeability: Moderately slow in the solum and slow or very slow in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silty clay loam

Surface runoff class: High
Hazard of wind erosion: Slight

Thrifton

Available water capacity: About 2.7 inches to a depth of 18 inches
Cation-exchange capacity in the surface layer: 14 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 10 to 20 inches to dense material
Depth to the top of the seasonal high water table: 1.5 to 3.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderately slow in the subsoil and slow in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Clay loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Miamian Soil

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The slope restricts the use of equipment for preparing sites for planting and seeding.
- Burning may destroy organic matter.

Building site development

- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design

of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Thrifton Soil

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 6e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Miamian—A-1; Thrifton—A-1
Hydric classification: Miamian—not hydric; Thrifton—not hydric

Mo—Montgomery silty clay loam

Setting

Landform: Flats and depressions on lake plains

Map Unit Composition

Montgomery and similar soils: 80 percent
Contrasting components:
McGary soils: 10 percent
Bennington soils: 5 percent
Cardington soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 8.5 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 20 to 36 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface

Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0 to 1 foot (fig. 15)
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 2 to 5 percent
Parent material: Glaciolacustrine deposits
Permeability: Very slow or slow
Potential for frost action: High
Shrink-swell potential: High
Texture of the surface layer: Silty clay loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- The root system of winter grain crops may be damaged by frost action.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Clods may form if the soil is tilled when wet.
- Controlling traffic can minimize soil compaction.
- The rooting depth of crops may be restricted by the high clay content.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- A combination of surface and subsurface drainage helps to remove excess water.
- Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

Figure 15.—Ponding in an area of Montgomery silty clay loam.

• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.
• Because of the stickiness of the soil, the use of equipment for site preparation is restricted to the drier periods.
• A loss of soil productivity may occur following an episode of fire.

Building site development

• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 3w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-2
Hydric classification: Hydric

Mr—Muskego muck

Setting

Landform: Depressions on outwash terraces

Map Unit Composition

Muskego and similar soils: 90 percent
Contrasting components:
Patton soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 17.7 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 140 to 180 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0 to 1 foot
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 60 to 90 percent
Parent material: Herbaceous organic material over coprogenic material
Permeability: Very slow or slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Muck
Surface runoff class: Negligible
Hazard of wind erosion: Severe

Use and Management Considerations

Cropland

• Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• A combination of surface and subsurface drainage helps to remove excess water.

• Subsidence or shrinkage of the muck causes displacement of subsurface drains.
• Control of the water table can minimize subsidence, help to prevent burning, and reduce the hazard of wind erosion.
• The soil may be deficient in micronutrients because of the high content of organic matter.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low pH in the soil may cause a nutrient imbalance in seedlings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• When this soil is drained, the organic layers subside. Subsidence leads to differential rates of settlement, which may cause foundations to break. Because of the high potential for subsidence, this soil is generally unsuited to building site development.
• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Subsidence of the organic material reduces the bearing capacity of this soil.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 4w
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: D-1
Hydric classification: Hydric

NaD2—Negley loam, 12 to 20 percent slopes, eroded

Setting

Landform: Illinoian outwash terraces
Position on the landform: Risers and footslopes

Map Unit Composition

Negley and similar soils: 90 percent
Contrasting components:
Pike soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 6.5 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 6 to 22 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate or moderately rapid
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• Rock fragments obstruct the use of mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

NaE—Negley loam, 20 to 35 percent slopes

Setting

Landform: Illinoian outwash terraces
Position on the landform: Risers and backslopes

Map Unit Composition

Negley and similar soils: 90 percent
Contrasting components:
Pike soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 8.1 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 6 to 22 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate or moderately rapid
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• The slope may restrict the use of some farm equipment.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of the slope, the use of mechanical planting equipment is not practical.
• Rock fragments obstruct the use of mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 6e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-3
Hydric classification: Not hydric

Ne—Newark silt loam, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Newark and similar soils: 80 percent
Contrasting components:
Lindside soils: 10 percent
Patton soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 12.1 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 5 to 14 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 0.5 foot to 1.5 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 1 to 4 percent
Parent material: Silty alluvium
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.

- Small grain crops may be damaged by flooding in winter and spring.
- Subsurface drainage can lower the seasonal high water table.

Pastureland

- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- The root system of plants may be damaged by frost action.
- Restricting grazing during wet periods can minimize compaction.

Forestland

- A seasonal high water table can inhibit the growth of some species of seedlings by restricting root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Flooding may result in damage to haul roads and increased maintenance costs.
- Soil wetness may limit the use of this soil by log trucks.
- Flooding restricts the safe use of roads by log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

- Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.

Septic tank absorption fields

- This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: C-3
Hydric classification: Not hydric

OcA—Ockley silt loam, 0 to 2 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Ockley and similar soils: 80 percent
Contrasting components:
  Sleeth soils: 10 percent
  Westland soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 7.4 inches to a depth of 50 inches
Cation-exchange capacity in the surface layer: 3 to 15 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 40 to 72 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate in the solum and very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam

Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• This soil is well suited to pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Interpretive Groups

Land capability classification: 1
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

OcB—Ockley silt loam, 2 to 6 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Ockley and similar soils: 80 percent
Contrasting components:
Sleeth soils: 10 percent
Westland soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 8.2 inches to a depth of 50 inches
Cation-exchange capacity in the surface layer: 3 to 15 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 40 to 72 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate in the solum and very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

Pa—Patton silty clay loam

Setting

Landform: Flats and depressions in glacial lakes (relict)

Map Unit Composition

Patton and similar soils: 80 percent
Contrasting components:
Fitchville soils: 10 percent
Glenford soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 11.9 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 22 to 31 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0.0 to 0.5 foot
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 3 to 5 percent
Parent material: Glaciolacustrine deposits
Permeability: Moderate in the solum and moderately slow in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silty clay loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.

• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• A combination of surface and subsurface drainage helps to remove excess water.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.
• A loss of soil productivity may occur following an episode of fire.

Building site development

• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Hydric

Pb—Patton silty clay loam, rarely flooded

Setting

Landform: Flats and depressions in glacial lakes (relict)

Map Unit Composition

Patton and similar soils: 80 percent
Contrasting components:
Fitchville soils: 10 percent
Aetna soils: 5 percent
Glenford soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 12 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 22 to 31 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At the surface to 0.5 foot below the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0.0 to 0.5 foot
Drainage class: Poorly drained
Frequency of flooding: Rare
Content of organic matter in the surface layer: 3 to 5 percent
Parent material: Glaciolacustrine deposits
Permeability: Moderate in the solum and moderately slow in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silty clay loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- The root system of winter grain crops may be damaged by frost action.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- A combination of surface and subsurface drainage helps to remove excess water.

Pastureland

- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- The root system of plants may be damaged by frost action.
- Restricting grazing during wet periods can minimize compaction.

Forestland

- A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Soil wetness may limit the use of log trucks.
- Ponding restricts the safe use of roads by log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- A loss of soil productivity may occur following an episode of fire.

Building site development

- Under unusual weather conditions, this soil is subject to rare flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.
- Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

- This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.
- Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

- Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Hydric

Pe—Pewamo silty clay loam

Setting

Landform: Flats and depressions on Wisconsinan till plains

Map Unit Composition

Pewamo and similar soils: 80 percent
Contrasting components:
Bennington soils: 10 percent
Cardington soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 9 inches to a depth of 60 inches

Cation-exchange capacity in the surface layer: 10 to 25 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0 to 1 foot
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 3 to 5 percent
Parent material: Till
Permeability: Moderately slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silty clay loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Clods may form if the soil is tilled when wet.
• Controlling traffic can minimize soil compaction.
• The rooting depth of crops may be restricted by the high clay content.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• A combination of surface and subsurface drainage helps to remove excess water.
• Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.
• A loss of soil productivity may occur following an episode of fire.

Building site development

• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Hydric

Ph—Pits, quarry

Setting

Landform: Sandstone bedrock-controlled uplands
Size of areas: 5 to 35 acres
Shape of areas: Irregular or rectangular

Definition

• This map unit consists of areas from which sandstone has been quarried.

Use and Management Considerations

• Onsite investigation is needed to determine the suitability for specific uses.

PkB—Pike silt loam, 2 to 6 percent slopes

Setting

Landform: Illinoian outwash terraces
Position on the landform: Treads

Map Unit Composition

Pike and similar soils: 90 percent
Contrasting components:
Negley soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 11.2 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 6 to 15 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over outwash
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e

Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

PkC2—Pike silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: Illinoian outwash terraces
Position on the landform: Risers

Map Unit Composition

Pike and similar soils: 90 percent
Contrasting components:
Negley soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 11 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 6 to 15 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over outwash
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design

of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

Ro—Rockmill silty clay loam

Setting

Landform: Flats and depressions on lake plains

Map Unit Composition

Rockmill and similar soils: 85 percent
Contrasting components:
Aetna soils: 5 percent
Marengo soils: 5 percent
Patton soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 20.1 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 15 to 25 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0.0 to 0.5 foot
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 4 to 12 percent
Parent material: Alluvium over organic material
Permeability: Moderate in the mineral part and moderately rapid in the organic part
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silty clay loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• A combination of surface and subsurface drainage helps to remove excess water.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Interpretive Groups

Land capability classification: 3w
Prime farmland classification: Prime farmland where drained

Pasture and hayland suitability group: C-1
Hydric classification: Hydric

Rp—Rockmill silty clay loam, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Rockmill and similar soils: 85 percent
Contrasting components:
Aetna soils: 5 percent
Marengo soils: 5 percent
Patton soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 19.2 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 15 to 25 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0.0 to 0.5 foot
Drainage class: Very poorly drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 4 to 12 percent
Parent material: Alluvium over organic material
Permeability: Moderate in the mineral part and moderately rapid in the organic part
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silty clay loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- The root system of winter grain crops may be damaged by frost action.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Controlling traffic can minimize soil compaction.
- Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
- Small grain crops may be damaged by flooding in winter and spring.
- A combination of surface and subsurface drainage helps to remove excess water.

Pastureland

- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- The root system of plants may be damaged by frost action.
- Restricting grazing during wet periods can minimize compaction.

Forestland

- A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Flooding may result in damage to haul roads and increased maintenance costs.
- Soil wetness may limit the use of log trucks.
- Flooding and ponding restrict the safe use of roads by log trucks.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

- Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.
- Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

- This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of

the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.
• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 3w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-3
Hydric classification: Hydric

Rt—Rossburg silt loam, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Rossburg and similar soils: 85 percent
Contrasting components:
Beaucoup soils: 5 percent
Gessie soils: 5 percent
Shoals soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 11.6 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 9 to 24 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 4 to 8 percent
Parent material: Loamy alluvium
Permeability: Moderate in the solum and moderately rapid in the underlying material
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Controlling traffic can minimize soil compaction.
• Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
• Small grain crops may be damaged by flooding in winter and spring.

Pastureland

• Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
• Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Flooding may result in damage to haul roads and increased maintenance costs.
• Flooding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.

Septic tank absorption fields

• This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

• Local roads and streets may be damaged by frost

action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-5
Hydric classification: Not hydric

Sc—Sebring silt loam, rarely flooded

Setting

Landform: Flats and depressions in glacial lakes (relict)

Map Unit Composition

Sebring and similar soils: 85 percent
Contrasting components:
Aetna soils: 5 percent
Euclid soils: 5 percent
Newark soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 9.5 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 15 to 27 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At the surface to 1 foot below the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0 to 1 foot
Drainage class: Poorly drained
Frequency of flooding: Rare
Content of organic matter in the surface layer: 3 to 5 percent
Parent material: Glaciolacustrine deposits
Permeability: Moderately slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• A combination of surface and subsurface drainage helps to remove excess water.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Under unusual weather conditions, this soil is subject to rare flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.
• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

• This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.
• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

- Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 3w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Hydric

SdD—Shelocta silt loam, 15 to 25 percent slopes

Setting

Landform: Hills
Position on the landform: Shoulders and footslopes

Map Unit Composition

Shelocta and similar soils: 80 percent
Contrasting components:
Berks soils: 5 percent
Germano soils: 5 percent
Gilpin soils: 5 percent
Wellston soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 9.1 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 5 to 16 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 48 to 120 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 5.0 percent
Parent material: Colluvium
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The slope restricts the use of equipment for preparing sites for planting and seeding.
- Burning may destroy organic matter.

Building site development

- The slope influences the use of machinery and the amount of excavation required. Special building

practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

- The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of properly installing the effluent distribution lines.
- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-2
Hydric classification: Not hydric

SeE—Shelocta-Berks complex, 25 to 40 percent slopes

Setting

Landform: Hills
Position on the landform: Backslopes

Map Unit Composition

Shelocta and similar soils: 50 percent
Berks and similar soils: 40 percent
Contrasting components:
Cruze soils: 10 percent

Soil Properties and Qualities

Shelocta

Available water capacity: About 9.2 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 5 to 16 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 48 to 120 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 5.0 percent
Parent material: Colluvium
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Berks

Available water capacity: About 1.7 inches to a depth of 24 inches
Cation-exchange capacity in the surface layer: 5 to 15 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 18 to 38 inches to bedrock (paralithic); 20 to 40 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Residuum
Permeability: Moderate or moderately rapid
Potential for frost action: Low
Shrink-swell potential: Low
Texture of the surface layer: Channery silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Shelocta Soil

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- The slope may restrict the use of some farm equipment.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- Because of the slope, the use of mechanical planting equipment is not practical.
- The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Berks Soil

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- The slope may restrict the use of some farm equipment.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of conservation tillage when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
- Because of the slope, the use of mechanical planting equipment is not practical.
- Rock fragments obstruct the use of mechanical planting equipment.
- The slope restricts the use of equipment for preparing sites for planting and seeding.
- Burning may destroy organic matter.

Building site development

- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
- The nature and depth of the soft bedrock in this soil reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

Septic tank absorption fields

- Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.
- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 6e
Prime farmland classification: Not prime farmland

Pasture and hayland suitability group: Shelocta—A-3; Berks—F-2
Hydric classification: Shelocta—not hydric; Berks—not hydric

SfD—Shelocta-Cruze complex, 15 to 25 percent slopes

Setting

Landform: Hills
Position on the landform: Shoulders and footslopes

Map Unit Composition

Shelocta and similar soils: 45 percent
Cruze and similar soils: 40 percent
Contrasting components:
Berks soils: 5 percent
Germano soils: 5 percent
Gilpin soils: 5 percent

Soil Properties and Qualities

Shelocta

Available water capacity: About 9.3 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 5 to 16 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 48 to 120 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 5.0 percent
Parent material: Colluvium
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Loam
Surface runoff class: High
Hazard of wind erosion: Slight

Cruze

Available water capacity: About 7.4 inches to a depth of 53 inches
Cation-exchange capacity in the surface layer: 8 to 22 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 48 to 80 inches to bedrock (paralithic)
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Colluvium over residuum
Permeability: Very slow or slow
Potential for frost action: High
Shrink-swell potential: High
Texture of the surface layer: Silt loam
Surface runoff class: Very high
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Shelocta Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Cruze Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• The rooting depth of crops may be restricted by the high clay content.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Severe shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

• The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of properly installing the effluent distribution lines.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of

the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 4e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Shelocta—A-2; Cruze—A-2
Hydric classification: Shelocta—not hydric; Cruze—not hydric

SfE—Shelocta-Cruze complex, 25 to 40 percent slopes

Setting

Landform: Hills
Position on the landform: Backslopes

Map Unit Composition

Shelocta and similar soils: 45 percent
Cruze and similar soils: 40 percent
Contrasting components:
Berks soils: 5 percent
Germano soils: 5 percent
Gilpin soils: 5 percent

Soil Properties and Qualities

Shelocta

Available water capacity: About 9.3 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 5 to 16 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 48 to 120 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 5.0 percent
Parent material: Colluvium
Permeability: Moderate
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Loam
Surface runoff class: High
Hazard of wind erosion: Slight

Cruze

Available water capacity: About 7.6 inches to a depth of 53 inches
Cation-exchange capacity in the surface layer: 8 to 22 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 48 to 80 inches to bedrock (paralithic)
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Colluvium
Permeability: Very slow or slow
Potential for frost action: High
Shrink-swell potential: High
Texture of the surface layer: Silt loam
Surface runoff class: Very high
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Shelocta Soil

Pastureland

- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- The slope may restrict the use of some farm equipment.

Forestland

- If the soil is disturbed, the slope increases the hazard of erosion.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• Because of the slope, the use of mechanical planting equipment is not practical.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Cruze Soil

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• The slope may restrict the use of some farm equipment.
• The root system of plants may be damaged by frost action.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, harvesting equipment, and mechanical planting equipment.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• Because of the slope, the use of mechanical planting equipment is not practical.
• The slope restricts the use of equipment for preparing sites for planting and seeding.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Severe shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

• The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of properly installing the effluent distribution lines.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines.
• The seasonal high water table in areas of this soil

greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 6e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Shelocta—A-3; Cruze—A-3
Hydric classification: Shelocta—not hydric; Cruze—not hydric

Sh—Shoals silt loam, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Shoals and similar soils: 80 percent
Contrasting components:
Aetna soils: 5 percent
Beaucoup soils: 5 percent
Eel soils: 5 percent
Stonelick soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 10.9 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 27 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 0.5 foot to 1.5 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Loamy alluvium
Permeability: Moderate in the subsoil and moderate or moderately rapid in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- The root system of winter grain crops may be damaged by frost action.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
- Small grain crops may be damaged by flooding in winter and spring.
- Subsurface drainage can lower the seasonal high water table.

Pastureland

- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- The root system of plants may be damaged by frost action.
- Restricting grazing during wet periods can minimize compaction.

Forestland

- A seasonal high water table can inhibit the growth of some species of seedlings by restricting root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Flooding may result in damage to haul roads and increased maintenance costs.
- Soil wetness may limit the use of this soil by log trucks.

• Flooding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.

Septic tank absorption fields

• This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-3
Hydric classification: Not hydric

SkA—Sleeth silt loam, 0 to 2 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Sleeth and similar soils: 85 percent
Contrasting components:
Ockley soils: 5 percent
Thackery soils: 5 percent
Westland soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 8.3 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 5 to 19 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 0.5 foot to 1.5 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 3.0 percent
Parent material: Outwash
Permeability: Moderate in the subsoil and very rapid in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• Subsurface drainage can lower the seasonal high water table.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• Burning may destroy organic matter.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.
• In some areas the dense nature of the subsurface layer increases the difficulty of digging and compacting the soil material in shallow excavations.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Not hydric

St—Stonelick sandy loam, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Stonelick and similar soils: 80 percent
Contrasting components:
Aetna soils: 5 percent
Beaucoup soils: 5 percent
Eel soils: 5 percent
Shoals soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 6.7 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 4 to 15 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Parent material: Alluvium
Permeability: Moderately rapid
Potential for frost action: Moderate
Shrink-swell potential: Low
Texture of the surface layer: Sandy loam

Surface runoff class: Very low
Hazard of wind erosion: Moderate

Use and Management Considerations

Cropland

- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
- Small grain crops may be damaged by flooding in winter and spring.

Pastureland

- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Flooding may result in damage to haul roads and increased maintenance costs.
- Flooding restricts the safe use of roads by log trucks.
- A loss of soil productivity may occur following an episode of fire.

Building site development

- Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.
- Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

- This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-5
Hydric classification: Not hydric

TaC2—Tarlton silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: Bedrock-controlled rises on Wisconsinan till plains
Position on the landform: Footslopes, summits, shoulders, and backslopes

Map Unit Composition

Tarlton and similar soils: 85 percent
Contrasting components:
Bennington soils: 5 percent
Cardington soils: 5 percent
Centerburg soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 4.6 inches to a depth of 34 inches
Cation-exchange capacity in the surface layer: 15 to 25 milliequivalents per 100 grams
Depth class: Moderately deep
Depth to root-restrictive feature: 20 to 40 inches to bedrock (paralithic); 39 to 42 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till over residuum
Permeability: Moderate or moderately slow in the upper part and slow or very slow in the lower part
Potential for frost action: High
Shrink-swell potential: High

Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The rooting depth of crops is restricted by bedrock and a high clay content.
• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The root system of plants may be damaged by frost action.
• The rooting depth of plants may be restricted by bedrock.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Bedrock may interfere with the construction of haul roads and log landing sites.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Severe shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.
• The nature and depth of the soft bedrock in this soil reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

• The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of properly installing the effluent distribution lines.
• Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: F-1
Hydric classification: Not hydric

ThA—Thackery silt loam, 0 to 2 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Thackery and similar soils: 80 percent
Contrasting components:
Sleeth soils: 10 percent
Westland soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 11.3 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 8 to 21 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 40 to 72 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: 2.0 to 3.5 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate in the solum and rapid or very rapid in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• The root system of plants may be damaged by frost action.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to

prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 1
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

ThB—Thackery silt loam, 2 to 6 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Thackery and similar soils: 80 percent
Contrasting components:
Sleeth soils: 10 percent
Westland soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 6.7 inches to a depth of 54 inches
Cation-exchange capacity in the surface layer: 8 to 21 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 40 to 72 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: 2.0 to 3.5 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate in the solum and rapid or very rapid in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- The root system of winter grain crops may be damaged by frost action.
- Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

- Erosion control is needed when pastures are renovated.
- The root system of plants may be damaged by frost action.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil also increases the cost of constructing haul roads and log landings.
- Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

- The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
- Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

- The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
- The excessive permeability in the substratum limits the proper treatment of the effluent from septic

systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

Ud—Udorthents, loamy

Definition

- This map unit consists of areas that have been cut and filled. The soil material is loamy.

Use and Management Considerations

- Onsite investigation is needed to determine the suitability for specific uses.

Interpretive Groups

Land capability classification: None assigned
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: None assigned
Hydric status: Not hydric

Uf—Udorthents, loamy, organic substratum

Definition

- This map unit consists of areas that have been cut and filled and that are underlain by organic material.

Use and Management Considerations

- Onsite investigation is needed to determine the suitability for specific uses.

Interpretive Groups

Land capability classification: None assigned
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: None assigned
Hydric classification: Not hydric

Ug—Udorthents, sandy

Definition

- This map unit consists of areas that have been cut and filled. The soil material is sandy.

Use and Management Considerations

- Onsite investigation is needed to determine the suitability for specific uses.

Interpretive Groups

Land capability classification: None assigned
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: None assigned
Hydric classification: Not hydric

Um—Urban land-Aetna complex, rarely flooded

Setting

Landform: Areas of urban development on flood plains and alluvial fans
Size of areas: 20 to 100 acres
Shape of areas: Rectangular

Map Unit Composition

Urban land: 60 percent
Aetna and similar soils: 30 percent
Contrasting components:
Patton soils: 5 percent
Beaucoup soils: 3 percent
Eel soils: 2 percent

Definition of Urban Land

- Urban land consists of areas that are covered by impervious surfaces, such as pavement and buildings. Onsite investigation is needed to determine the suitability for specific uses.

Soil Properties and Qualities

Aetna

Available water capacity: About 10.8 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 24 milliequivalents per 100 grams

Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1 to 2 feet
Kind of water table: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Frequency of flooding: Occasional
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Silty alluvium over glaciolacustrine deposits
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Aetna Soil

Building site development

• Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuitable for homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent the damage caused by flooding.

Septic tank absorption fields

• This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Special design of roads and bridges is needed to prevent the damage caused by flooding.

Interpretive Groups

Hydric classification: Aetna—not hydric

UoC—Urban land-Amanda complex, 2 to 12 percent slopes

Setting

Landform: Areas of urban development on glacial moraines
Size of areas: 20 to 100 acres
Shape of areas: Rectangular

Map Unit Composition

Urban land: 45 percent
Amanda and similar soils: 35 percent
Contrasting components:
Bennington soils: 10 percent
Marengo soils: 10 percent

Definition of Urban Land

• Urban land consists of areas that are covered by impervious surfaces, such as pavement and buildings. Onsite investigation is needed to determine the suitability for specific uses.

Soil Properties and Qualities

Amanda

Available water capacity: About 9 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 3.5 to 5.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Till
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part of the solum and in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Amanda Soil

Building site development

• Moderate shrinking and swelling of the soil may

crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent the damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Hydric classification: Amanda—not hydric

UrB—Urban land-Bennington complex, 0 to 6 percent slopes

Setting

Landform: Areas of urban development on glacial moraines
Size of areas: 20 to 300 acres
Shape of areas: Rectangular

Map Unit Composition

Urban land: 45 percent
Bennington and similar soils: 35 percent
Contrasting components:
  Cardington soils: 10 percent
  Pewamo soils: 5 percent
  Centerburg soils: 3 percent
  Marengo soils: 2 percent

Definition of Urban Land

• Urban land consists of areas that are covered by impervious surfaces, such as pavement and buildings. Onsite investigation is needed to determine the suitability for specific uses.

Soil Properties and Qualities

Bennington

Available water capacity: About 7.8 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 20 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 0.5 foot to 1.5 feet
Kind of water table: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Content of organic matter in the surface layer: 2 to 4 percent
Parent material: Till
Permeability: Very slow or slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Bennington Soil

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations

and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Hydric classification: Bennington—not hydric

UtC—Urban land-Cardington complex, 2 to 12 percent slopes

Setting

Landform: Areas of urban development on glacial moraines
Size of areas: 20 to 300 acres
Shape of areas: Rectangular

Map Unit Composition

Urban land: 45 percent
Cardington and similar soils: 35 percent
Contrasting components:
Bennington soils: 10 percent
Pewamo soils: 10 percent

Definition of Urban Land

• Urban land consists of areas that are covered by impervious surfaces, such as pavement and buildings. Onsite investigation is needed to determine the suitability for specific uses.

Soil Properties and Qualities

Cardington

Available water capacity: About 7.8 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 12 to 24 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Parent material: Till
Permeability: Slow or moderately slow
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Very high
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Cardington Soil

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Hydric classification: Cardington—not hydric

UuB—Urban land-Celina complex, 0 to 6 percent slopes

Setting

Landform: Areas of urban development on glacial moraines
Size of areas: 20 to 100 acres
Shape of areas: Rectangular

Map Unit Composition

Urban land: 45 percent
Celina and similar soils: 35 percent
Contrasting components:
Crosby soils: 10 percent
Kokomo soils: 10 percent

Definition of Urban Land

• Urban land consists of areas that are covered by impervious surfaces, such as pavement and buildings. Onsite investigation is needed to determine the suitability for specific uses.

Soil Properties and Qualities

Celina

Available water capacity: About 5.3 inches to a depth of 28 inches
Cation-exchange capacity in the surface layer: 9 to 19 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 20 to 40 inches to dense material
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over till
Permeability: Moderately slow above the dense till and very slow in the dense till
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Celina Soil

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic tank absorption fields

• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost

action, which is caused by the freezing and thawing of soil moisture.

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Hydric classification: Celina—not hydric

UxB—Urban land-Ockley complex, 0 to 6 percent slopes

Setting

Landform: Areas of urban development on glacial outwash terraces
Size of areas: 20 to 300 acres
Shape of areas: Rectangular

Map Unit Composition

Urban land: 45 percent
Ockley and similar soils: 35 percent
Contrasting components:
Sleeth soils: 10 percent
Westland soils: 10 percent

Definition of Urban Land

- Urban land consists of areas that are covered by impervious surfaces, such as pavement and buildings. Onsite investigation is needed to determine the suitability for specific uses.

Soil Properties and Qualities

Ockley

Available water capacity: About 7 inches to a depth of 44 inches
Cation-exchange capacity in the surface layer: 3 to 15 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 40 to 72 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Outwash
Permeability: Moderate in the solum and very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Ockley Soil

Building site development

- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

- The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local roads and streets

- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Interpretive Groups

Hydric classification: Ockley—not hydric

Uy—Urban land-Udorthents complex

Setting

Size of areas: 20 to 200 acres
Shape of areas: Rectangular

Map Unit Composition

Urban land: 60 percent
Udorthents and similar soils: 40 percent

Definition of Urban Land

- Urban land consists of areas that are covered by impervious surfaces, such as pavement and buildings.

Definition of Udorthents

• Udorthents consist of areas that have been cut and filled.

Use and Management Considerations

• Onsite investigation is needed to determine the suitability for specific uses.

Interpretive Groups

Hydric classification: Udorthents—not hydric

W—Water

Definition

• This map unit consists of bodies of water ranging in size from 1 to 5 acres.

WdA—Wea silt loam, 0 to 2 percent slopes

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Wea and similar soils: 90 percent
Contrasting components:
Westland soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 9.1 inches to a depth of 55 inches
Cation-exchange capacity in the surface layer: 8 to 24 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: 40 to 70 inches to strongly contrasting textural stratification
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 2 to 5 percent
Parent material: Outwash
Permeability: Moderate in the subsoil and very rapid in the substratum
Potential for frost action: Moderate
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.

Pastureland

• This soil is well suited to pasture.

Forestland

• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.

Building site development

• Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
• Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields

• The restricted permeability in the subsoil limits the absorption and proper treatment of the effluent from septic systems.
• The excessive permeability in the substratum limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local roads and streets

• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 1
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: A-1
Hydric classification: Not hydric

WeC—Wellston silt loam, 6 to 15 percent slopes

Setting

Landform: Hills
Position on the landform: Shoulders and summits

Map Unit Composition

Wellston and similar soils: 85 percent
Contrasting components:
Berks soils: 5 percent
Cruze soils: 5 percent
Gilpin soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 9.2 inches to a depth of 48 inches
Cation-exchange capacity in the surface layer: 8 to 16 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 40 to 72 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over residuum
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of properly installing the effluent distribution lines.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: A-6
Hydric classification: Not hydric

WfC—Wellston-Cruze complex, 8 to 15 percent slopes

Setting

Landform: Hills
Position on the landform: Shoulders and summits

Map Unit Composition

Wellston and similar soils: 50 percent
Cruze and similar soils: 30 percent
Contrasting components:
Berks soils: 10 percent
Gilpin soils: 10 percent

Soil Properties and Qualities

Wellston

Available water capacity: About 9.3 inches to a depth of 55 inches
Cation-exchange capacity in the surface layer: 6 to 14 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 40 to 72 inches to bedrock (lithic)
Depth to the top of the seasonal high water table: More than 6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Loess over residuum
Permeability: Moderate
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Cruze

Available water capacity: About 6.4 inches to a depth of 45 inches
Cation-exchange capacity in the surface layer: 8 to 22 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 48 to 80 inches to bedrock (paralithic)
Depth to the top of the seasonal high water table: 1.5 to 3.0 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 3 percent
Parent material: Colluvium
Permeability: Very slow or slow
Potential for frost action: High
Shrink-swell potential: High
Texture of the surface layer: Silt loam
Surface runoff class: High
Hazard of wind erosion: Slight

Use and Management Considerations Affecting the Wellston Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• The rooting depth of crops may be restricted by the high clay content.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• Severe shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.
• In some areas the high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

• The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of properly installing the effluent distribution lines.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Use and Management Considerations Affecting the Cruze Soil

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• The root system of plants may be damaged by frost action.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.

Building site development

• The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of properly installing the effluent distribution lines.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: Wellston—A-6; Cruze—A-6
Hydric classification: Wellston—not hydric; Cruze—not hydric

Wg—Westland silt loam, overwash

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Westland and similar soils: 85 percent
Contrasting components:
Aetna soils: 5 percent
Thackery soils: 5 percent
Wea soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 9.9 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 10 to 26 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0 to 1 foot
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 2 to 5 percent
Parent material: Outwash
Permeability: Moderate in the solum and very rapid in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silt loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• A combination of surface and subsurface drainage helps to remove excess water.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The

low strength of the soil may create unsafe conditions for log trucks.
• Rock fragments obstruct the use of mechanical planting equipment.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building site development

• Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic tank absorption fields

• Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

• Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
• Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Hydric

Wk—Westland silty clay loam

Setting

Landform: Wisconsinan outwash terraces
Position on the landform: Treads

Map Unit Composition

Westland and similar soils: 90 percent
Contrasting components:
Thackery soils: 5 percent
Wea soils: 5 percent

Soil Properties and Qualities

Available water capacity: About 9.2 inches to a depth of 60 inches
Cation-exchange capacity in the surface layer: 15 to 31 milliequivalents per 100 grams
Depth class: Very deep
Depth to root-restrictive feature: More than 80 inches
Seasonal high water table: At or near the surface
Kind of water table: Apparent
Ponding duration: Long
Depth of ponding: 0 to 1 foot
Drainage class: Very poorly drained
Flooding: None
Content of organic matter in the surface layer: 2 to 5 percent
Parent material: Outwash
Permeability: Moderate in the solum and very rapid in the substratum
Potential for frost action: High
Shrink-swell potential: Moderate
Texture of the surface layer: Silty clay loam
Surface runoff class: Negligible
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• The root system of winter grain crops may be damaged by frost action.
• Careful selection and application of chemicals and fertilizers can help to minimize the possibility of ground-water contamination.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• A combination of surface and subsurface drainage helps to remove excess water.

Pastureland

• Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
• The root system of plants may be damaged by frost action.
• Restricting grazing during wet periods can minimize compaction.

Forestland

• A seasonal high water table or standing water can inhibit the growth of some species of seedlings by restricting root respiration.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Soil wetness may limit the use of this soil by log trucks.
• Ponding restricts the safe use of roads by log trucks.
• Because of low soil strength, the use of harvesting

equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- A loss of soil productivity may occur following an episode of fire.

Building site development

- Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.
- Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.
- In some areas the dense nature of the subsurface layer increases the difficulty of digging and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local roads and streets

- Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
- Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.
- Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Interpretive Groups

Land capability classification: 2w
Prime farmland classification: Prime farmland where drained
Pasture and hayland suitability group: C-1
Hydric classification: Hydric

ZnB—Zanesville silt loam, 2 to 6 percent slopes

Setting

Landform: Hills
Position on the landform: Shoulders and summits

Map Unit Composition

Zanesville and similar soils: 80 percent
Contrasting components:
Berks soils: 10 percent
Gilpin soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 6.5 inches to a depth of 32 inches
Cation-exchange capacity in the surface layer: 6 to 21 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 4 to 40 inches to a fragipan; 40 to 80 inches to bedrock (paralithic)
Depth to the top of the seasonal high water table: 2 to 3 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 2 percent
Parent material: Loess over residuum
Permeability: Moderate above the fragipan and very slow or slow in the fragipan
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Low
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce the hazard of erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- The root system of winter grain crops may be damaged by frost action.
- Controlling traffic can minimize soil compaction.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- The rooting depth of crops is restricted by dense soil material.

Pastureland

- Erosion control is needed when pastures are renovated.
- The root system of plants may be damaged by frost action.

Forestland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• Burning may destroy organic matter.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.

Septic tank absorption fields

• The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of properly installing the effluent distribution lines.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Land capability classification: 2e
Prime farmland classification: Prime farmland
Pasture and hayland suitability group: F-3
Hydric classification: Not hydric

ZnC2—Zanesville silt loam, 6 to 15 percent slopes, eroded

Setting

Landform: Hills
Position on the landform: Shoulders and footslopes

Map Unit Composition

Zanesville and similar soils: 80 percent
Contrasting components:
Berks soils: 10 percent
Gilpin soils: 10 percent

Soil Properties and Qualities

Available water capacity: About 5.7 inches to a depth of 32 inches
Cation-exchange capacity in the surface layer: 6 to 21 milliequivalents per 100 grams
Depth class: Deep or very deep
Depth to root-restrictive feature: 4 to 40 inches to a fragipan; 40 to 80 inches to bedrock (paralithic)
Depth to the top of the seasonal high water table: 2 to 3 feet
Kind of water table: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Content of organic matter in the surface layer: 1 to 2 percent
Parent material: Loess over residuum
Permeability: Moderate above the fragipan and very slow or slow in the fragipan
Potential for frost action: High
Shrink-swell potential: Low
Texture of the surface layer: Silt loam
Surface runoff class: Medium
Hazard of wind erosion: Slight

Use and Management Considerations

Cropland

• Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
• Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
• Incorporating crop residue or other organic material into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
• The root system of winter grain crops may be damaged by frost action.
• Controlling traffic can minimize soil compaction.
• Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
• The rooting depth of crops is restricted by dense soil material.

Pastureland

• Avoiding overgrazing can reduce the hazard of erosion.
• Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
• Erosion control is needed when pastures are renovated.
• Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
• Using a system of conservation tillage when pastures are renovated conserves soil moisture.
• This soil provides poor summer pasture.
• The root system of plants may be damaged by frost action.

Forestland

• If the soil is disturbed, the slope increases the hazard of erosion.
• The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
• The low strength of the soil also increases the cost of constructing haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• Because of low soil strength, the use of harvesting equipment is limited and may result in damage. The low strength of the soil may create unsafe conditions for log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• Burning may destroy organic matter.

Building site development

• The seasonal high water table may restrict the period when excavations can be made and may result in the need for a higher degree of construction site development and building maintenance.
• Because of the seasonal high water table, this soil is poorly suited to building site development. Special design may be needed to prevent the structural damage caused by wetness.
• The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic tank absorption fields

• The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of properly installing the effluent distribution lines.
• The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
• Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.
• The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local roads and streets

• Local roads and streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.
• Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Land capability classification: 3e
Prime farmland classification: Not prime farmland
Pasture and hayland suitability group: F-3
Hydric classification: Not hydric

Important Farmlands

As defined by the U.S. Department of Agriculture, important farmlands consist of prime farmland, unique farmland, and farmland of statewide and local importance. These farmlands are important because they are the best lands for production of the Nation’s crops.

Prime Farmland

Prime farmland is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, woodland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 206,345 acres in Fairfield County, or about 63 percent of the total acreage, meets the soil requirements for prime farmland as defined by the Natural Resources Conservation Service.

Most of the prime farmland in the county is used as cropland. Urbanization in and around cities and along interstate corridors accounts for the majority of prime farmland lost to other uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 5 and in the “Interpretive Groups” table. These lists do not constitute a recommendation for a particular land use. On some soils included in the lists, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading “Detailed Soil Map Units.”

Unique Farmland

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. It has the special combination of soil qualities, location, growing season, and moisture supply needed for the economic production of sustained high yields of specific high-quality crops when treated and managed by acceptable farming methods. Examples of such crops are tree fruits, berries, and vegetables.

Unique farmland has an adequate supply of available moisture for the specific crops for which it is used because of stored moisture, precipitation, or irrigation and has a combination of soil qualities, growing season, temperature, humidity, air drainage, elevation, aspect, and other factors, such as nearness to markets, that favors the production of a specific food or fiber crop.

Lists of unique farmland are developed as needed in cooperation with conservation districts and others.

Additional Farmland of Statewide Importance

Some areas other than areas of prime farmland and unique farmland are of statewide importance in the production of food, feed, fiber, forage, and oilseed crops. The criteria used in defining and delineating these areas are determined by the appropriate state agency or agencies. Generally, additional farmland of statewide importance includes areas that nearly meet the criteria for prime farmland and that economically produce high yields of crops when treated and managed by acceptable farming methods. Some areas can produce as high a yield as areas of prime farmland if conditions are favorable. In some states additional farmland of statewide importance may include tracts of land that have been designated for agriculture by state law.

Additional Farmland of Local Importance

This land consists of areas that are of local importance in the production of food, feed, fiber, forage, and oilseed crops and are not identified as having national or statewide importance. Where appropriate, this land is identified by local agencies. It may include tracts of land that have been designated for agriculture by local ordinance.

Lists of this land are developed as needed in cooperation with conservation districts and others.

Hydric Soils

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 1998) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 1998).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

The map units listed in table 6 meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1998). The hydric soils are also listed in the “Interpretive Groups” section.

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform. The map units listed in table 7, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. Some areas of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, and the system of land capability classification used by the Natural Resources Conservation Service is explained.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

In 1995, about 108,900 acres in Fairfield County

was used for row crops, primarily corn and soybeans; 16,300 acres for wheat; and 14,900 acres for hay. In 1992, about 19,200 acres was pasture (Ohio Cooperative Extension Service, 1995; Ramey and others, 1993; USDA, 1971; USDA, 1987). Yearly fluctuations occur in the acreage devoted to each specific crop as a result of variations in the market value of each product.

The potential for increased food production is good in the county. Production can be increased by extending the latest crop production technology to all of the cropland in the county. This soil survey can greatly facilitate the application of such technology.

The major management needs in areas of the county used as cropland are measures that control erosion, measures that improve drainage, and measures that improve or maintain fertility and tilth.

Erosion is a hazard on all of the gently sloping to very steep soils in the county. It reduces soil productivity and results in deterioration of tilth. It also increases the amount of sediment and pesticides that enter waterways and streams (fig. 16). The erodibility of a particular soil depends in part on the physical properties of the soil. For example, Pike soils have a higher content of silt in the surface layer than Centerburg soils and thus are more susceptible to erosion, even though the Centerburg soils are on comparable slopes and support a similar vegetative cover. The hazard of erosion on all soils increases as the percentage of slope increases. In eroded spots, preparing a seedbed and tilling are difficult because part of the original friable surface layer has been removed. Such spots are common in areas of the eroded Tarlton and Miamian soils.

A protective plant cover increases the rate of water infiltration and reduces the runoff rate and the hazard of erosion. Keeping a plant cover on the soil for extended periods can hold soil losses to an amount that will not reduce the productivity of the soil. Including grasses and legumes in the cropping sequence reduces the risk of erosion, increases the supply of nitrogen, and improves tilth.

Soil loss also can be reduced by tillage methods that leave all of the crop residue on the surface throughout the year or that incorporate part of the residue into the soil. If these methods are applied, a high level of management is needed to control weeds and insects. These methods are best suited to well drained and moderately well drained soils. A drainage system is needed if no-till farming or another system of conservation tillage that leaves crop residue on the surface is applied in areas of somewhat poorly drained to very poorly drained soils.

Other erosion-control measures include grassed waterways, contour farming or contour stripcropping, and diversions. Grassed waterways are natural or constructed surface drains protected by a cover of grasses. Natural drainageways are the best sites for these waterways because they commonly require a minimum of shaping. The waterways should be wide and flat, so that they can be easily crossed by farm machinery. Diversions reduce the length of slopes and thus help to control runoff and erosion. They are most practical in areas of deep, well drained soils that have smooth slopes (Ohio Cooperative Extension Service, 1995; USDA/NRCS, National Engineering Handbook).

Information about the design of erosion-control practices for each kind of soil is available in the local office of the Natural Resources Conservation Service.

Soil drainage is a major management need in areas of very poorly drained to somewhat poorly drained soils, such as Crosby, Euclid, Kokomo, McGary, Montgomery, Patton, and Sebring soils, if they are used as cropland. Some soils are naturally so wet that the production of the crops common to the area is generally not possible without artificial drainage. Surface and subsurface drains are used to improve drainage. Finding adequate outlets for subsurface drainage systems is difficult in many areas of Montgomery and Sebring soils.

Protection from flooding is needed in areas of soils on flood plains, such as Eel, Gessie, and Stonelick soils. Levees are used in some areas to protect these soils from streambank overflow.

Natural soil fertility is low or medium in many of the soils on uplands in the county. The soils on the flood plains along Walnut Creek and the Hocking River, such as Gessie and Rossburg soils, are slightly acid to moderately alkaline in the root zone. These soils have a naturally higher content of plant nutrients than most of the soils on uplands. The soils on the flood plains formed in alluvium washed in from areas of till that has a high content of lime.

Many of the soils on uplands are naturally acid in the surface layer. Applications of ground limestone are needed to raise the pH level sufficiently for good production of alfalfa and other crops that grow well on nearly neutral soils. The supply of available phosphorus and potassium is naturally low in most of these soils. On all soils, additions of lime and fertilizer should be based on the results of soil tests, on the needs of the crop, and on the expected level of yields. Assistance in determining the kinds and amounts of lime and fertilizer to be applied can be obtained from the Ohio State University Extension.

Soil tilth is an important factor affecting the

Figure 16.—Erosion and sedimentation in an area of Amanda silt loam, 2 to 6 percent slopes, eroded.

germination of seeds and the infiltration of water into the soil. Soils that have good tilth are friable and porous.

Most of the soils used for crops in the county have a light-colored surface layer of silt loam that has a moderate or moderately low content of organic matter. Generally, the structure of these soils is weak. A surface crust forms during periods of heavy rainfall in areas where conventional tillage methods are used. The crust is hard when dry and is nearly impervious to water. As a result, it reduces the rate of water infiltration and increases the runoff rate. Using no-till farming or including grasses and legumes in a crop rotation can improve the rate of water infiltration. Regular additions of crop residue, barnyard manure, or other organic material can improve soil structure and minimize crusting.

Fall plowing is generally not a good means of

improving the tilth of soils that have a light-colored surface layer. If these soils are plowed in the fall, a crust forms in winter and spring. Many soils that are plowed in the fall are nearly as dense and hard at planting time as they were before they were plowed.

Fall plowing is common in areas of Eldean, Fox, Gessie, and Ockley soils on the flood plains and terraces along the Hocking River and in areas of Bennington, Cardington, and Centerburg soils on the till plain. Because of the hazard of erosion, soils that have slopes of more than 3 percent should not be plowed in the fall. Wind erosion is a hazard in all areas that are plowed in the fall, including nearly level areas.

Some of the soils in the county do not dry out quickly enough for plowing early in spring. Commonly, the fields are plowed in the spring before optimum moisture conditions are reached. This untimely plowing results in hard clods in the surface layer and zones of compacted soil in the subsurface layers.

Cropland Limitations and Hazards

The management concerns affecting the use of the detailed soil map units in the survey area for crops are shown in table 8. The main concerns in managing nonirrigated cropland are controlling flooding, controlling wind erosion and water erosion, preventing ground-water pollution, removing excess water, minimizing surface crusting and compaction, and maintaining soil tilth, fertility, and the content of organic matter.

Generally, a combination of several practices is needed to control *wind erosion* and *water erosion*. Conservation tillage, stripcropping, field windbreaks, tall grass barriers, contour farming, conservation cropping systems, crop residue management, diversions, and grassed waterways help to prevent excessive soil loss.

Surface drainage, subsurface drainage, or both can be used to remove *excess water*, to lower the *seasonal high water table*, and to help control *ponding.*

A *surface crust* forms in tilled areas after hard rains. This crust may inhibit seedling emergence. Regular additions of crop residue, manure, or other organic materials can improve soil structure and minimize crusting.

Tilling within the proper range in moisture content minimizes *surface compaction*.

Measures that are effective in maintaining *soil tilth, fertility,* and the *content of organic matter* include applying fertilizer, both organic and inorganic, including manure; incorporating crop residue or green manure crops into the soil; and using proper crop rotations. Controlling erosion helps to prevent the loss of organic matter and plant nutrients and thus helps to maintain productivity, although the level of fertility can be reduced even in areas where erosion is controlled. All soils used for nonirrigated crops respond well to applications of fertilizer.

Some of the limitations and hazards shown in the table cannot be easily overcome. These are *depth to bedrock, flooding, ponding, limited organic matter content,* and *slope.*

Depth to bedrock.—Rooting depth and available moisture may be limited by bedrock within a depth of 40 inches.

Flooding.—Flooding can damage winter grain and forage crops. A tillage method that partly covers crop residue and leaves a rough or ridged surface helps to prevent the removal of crop residue by floodwater. Tilling and planting should be delayed in the spring until flooding is no longer a hazard.

Ponding.—Surface drains helps to remove excess surface water and minimize the damage caused by ponding.

Limited organic matter content.—Many soils that have a light-colored surface layer have a low or moderately low content of organic matter and weak or moderate structure. Regularly adding crop residue, manure, and other organic material to the soil maintains or improves the content of organic matter and the soil structure.

Slope.—In areas where the slope is more than 25 percent, water erosion and wind erosion may be accelerated unless conservation farming practices are applied. The selection of crops and the use of equipment are limited. Cultivation may be restricted.

Additional limitations and hazards include the following:

High clay content.—The average content of clay in the subsoil is more than 35 percent. Species that can tolerate droughty conditions should be selected for planting.

Root-restrictive layer.—Root penetration may be severely inhibited because of the physical and chemical characteristics of the soil. Species that have a relatively shallow rooting system should be selected for planting.

Potential for ground-water pollution.—The potential for ground-water pollution is a concern in areas of soils that have excessive permeability, have hard bedrock within the profile, or have a seasonal high water table.

Limited available water capacity, fair tilth, poor tilth, restricted permeability, and *surface crusting.*—These limitations can be overcome by incorporating green

manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems.

Frost action.—Frost heaving can damage deep-rooted legumes and some small grain crops.

Clodding.—Clods may inhibit germination, reduce the rate of water infiltration, and increase the runoff rate.

Sandy layers.—Deep leaching of nutrients and pesticides may result from sandy layers. Crops generally respond better to smaller, more frequent applications of fertilizer and lime than to one large application.

Stony surface.—Stones or boulders on the surface or in the surface layer can hinder normal tillage unless they are removed.

Subsidence of the muck.—Subsidence or shrinkage occurs as a result of oxidation in the muck after the soil is drained. Control of the water table by subirrigation through subsurface drain lines reduces the hazards of subsidence, burning, and wind erosion.

Excessive alkalinity.—High pH in the upper part of the soil may inhibit plant growth and reduce the availability of potassium and micronutrients.

Excessive acidity.—Low pH in the upper part of the soil may increase concentrations of aluminum and manganese and may injure plants.

Gravelly surface.—This limitation causes rapid wear of tillage equipment. It cannot be easily overcome.

Following is an explanation of the criteria used to determine the limitations or hazards affecting cropland.

Depth to bedrock.—Bedrock is within a depth of 40 inches.

Easily eroded.—The K factor of the surface layer multiplied by the upper slope limit is more than 2.

Frequent flooding.—The soil is subject to frequent flooding.

Occasional flooding.—The soil is subject to occasional flooding.

Rare flooding.—The soil is subject to rare flooding.

Limited available water capacity.—The available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less.

Ponding.—The soil is ponded for at least brief periods.

High potential for ground-water pollution.—Hard bedrock is within a depth of 40 inches, or permeability is more than 6 inches per hour in some layer within a depth of 80 inches and is not 0.2 inch per hour or less in some layer within that depth.

Moderate potential for ground-water pollution.—An apparent water table is within a depth of 40 inches, or permeability is moderately rapid in some layer between depths of 24 and 60 inches and is not 0.2 inch per hour or less in some layer within a depth of 80 inches.

Poor tilth.—The soil is severely eroded, has less than 1 percent organic matter in the surface layer, or has more than 35 percent clay in the surface layer.

Fair tilth.—The soil has a surface layer of silty clay loam.

Excessive acidity.—The upper range of the pH of the soil is less than 4.5 within a depth of 40 inches.

Excessive alkalinity.—The lower range of the pH of the soil is more than 7.9 within a depth of 40 inches.

Restricted permeability.—Permeability is 0.06 inch per hour or less within a depth of 40 inches, and a seasonal high water table is within a depth of 18 inches.

High clay content.—A layer within a depth of 40 inches has a clay content that averages between 40 and 60 percent.

Very high clay content.—A layer within a depth of 40 inches has a clay content that averages more than 60 percent.

Root-restrictive layer.—A fragipan or dense material is within a depth of 40 inches.

Sandy layers.—The family particle size is sandy, sandy or sandy-skeletal, sandy over loamy, sandy over clayey, sandy-skeletal, sandy-skeletal over clayey, or sandy-skeletal over loamy; or the subgroup is Arenic or Psammentic; or the suborder is Psamments.

Seasonal high water table.—The lower limit of the seasonal high water table is less than 1.5 feet.

Slope.—The slope is more than 15 percent.

Wind erosion.—The upper range of the slope is 25 percent or less, and the wind erodibility group is 1, 2, or 3.

Erosion hazard.—The slope is more than 2 percent.

Surface crusting.—The content of organic matter in the surface layer is less than or equal to 3 percent, and the texture is silt loam, loam, or silty clay loam.

Surface compaction.—The soil has a surface layer of silt loam, silty clay loam, or silty clay.

Clodding.—The relative value of the total clay in the surface layer is greater than 32 percent.

Stony surface.—The texture of the surface layer includes a bouldery, very bouldery, extremely bouldery, stony, very stony, extremely stony, cobbly, very cobbly, or extremely cobbly modifier.

Frost action.—The soil has a high potential for frost action.

Part of the surface layer removed by erosion.—The surface layer is moderately eroded.

Most of the surface layer removed by erosion.—The surface layer is severely eroded.

Subsidence of the muck.—The content of organic matter in the surface layer is 20 percent or more.

Crop Yield Index

Table 9 is the crop yield index for Fairfield County. The yield index reflects the yield potential of a soil in relation to other soils in the county. It is based on the most productive soil (Westland), which is assigned a rating of 100. The other soils are ranked against this standard.

The yields used to calculate the index values are based on the use of good management practices.

The estimated yields can be calculated by using the yield index number as a percentage and multiplying it by 160 for corn, 49 for soybeans, or 60 for wheat. For example, to calculate the estimated yield of corn for map unit Pa, multiply the index number given for corn, as a percentage (.97), by 160. The result is an estimated 155 bushels of corn.

Advances in equipment technology, plant genetics, drainage, nutrient and pest management, and soil management make standard yield tables obsolete within a period of several years. The crop yield index provides users with the relative productivity of the soils and thus is less affected by these factors.

Current yield data and additional information on calculating estimated yields are available from the local office of the Natural Resources Conservation Service or the Ohio State University Extension.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961). *Capability classes*, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, woodland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, woodland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to pasture, woodland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The acreage of soils in each capability class and

subclass is shown in table 10. The capability classification of map units in this survey area is given in the section "Detailed Soil Map Units" and under the heading "Interpretive Groups."

Pasture and Hayland Management

Bob Hendershot, grasslands management systems specialist, Natural Resources Conservation Service, helped prepare this section.

Approximately 5 percent of Fairfield County is currently used as pasture and hayland. About 2 percent could be used as pasture and hayland but is idle land that is reverting to brush and young trees (Ohio Cooperative Extension Service, 1995; Ramey and others, 1993; USDA, 1987). Most of the acreage used for pasture and hay is in areas that have slopes of 12 to 25 percent. These soils are susceptible to erosion (Ohio Cooperative Extension Service, 1995; Ramey and others, 1993). The areas used for pasture and hay mainly support bluegrass and tall grasses. The tall grasses are tall fescue, orchardgrass-red clover, and orchardgrass-alfalfa. Many pastures are unimproved and need renovation and brush control. Some pastures and meadows show the negative effects of overgrazing, which results in weedy, short vegetative cover and an increase in the hazard of erosion. Soils in these fields commonly have low levels of phosphorus and potassium. Good management can restore these areas to much higher productivity.

Successful establishment of forage crops requires the selection of quality seed of species and varieties that are adapted to the soils in the area. Reseeding requires proper seedbed preparation, proper seeding methods, timely seeding, and proper applications of lime and fertilizer. For forage renovation, existing grass and weeds should be killed or suppressed before the desired species are reseeded. The object is to kill existing sod and leave it on or near the surface as a dead mulch. This mulch can reduce the hazard of erosion. In nearly level areas, the vegetation can be killed by plowing. In gently sloping and strongly sloping areas, tillage and seeding can be used. All tillage activities should be on the contour in these areas. Using a herbicide with the trash mulch method can reduce the amount of tillage needed to kill existing vegetation.

No-till methods can be used effectively on some soils in Fairfield County. These methods are not practical in areas with drainage limitations or excessive slopes. If no-till methods are used, vegetation should be suppressed or killed by grazing and herbicides.

April and August are normally the best times to make forage seedings. Seeding forage with a small grain can result in reduced stands because of plant competition for light, moisture, and nutrients.

Seeding mixtures should be based on soil types and on the desired pasture management system. Legumes increase the nutrient value of forage and provide nitrogen for grass growth. Alfalfa and red clover should be seeded on soils that have good drainage. Ladino clover and alsike clover are better adapted to the wetter soils.

Maintenance applications of lime and fertilizer can ensure good productivity and increase the life of the stand. These applications should be based on the results of soil tests. Before they go to seed, weeds should be controlled by mowing, clipping, and spraying. Such weed control is important for continued high production. Control of insects, such as alfalfa weevil and potato leaf hopper, may be necessary. All label restrictions should be observed when pesticides are used.

Harvesting hay, silage, or pasture at the proper stage of maturity can help to achieve the maximum quality of feed for animals. The Ohio Agronomy Guide (Ohio Cooperative Extension Service, 1995) can provide information on the proper management of forage species in a particular area.

Many pasture fields in Fairfield County are being infested with multiflora rose. Multiflora rose reduces the productivity of the field and limits the use of each field. This type of infestation should be treated before pastures are completely overtaken.

Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices. Soils in areas that have slopes of more than 25 percent are generally not recommended for use as pasture or hayland.

Table 11 can be used by farmers, farm managers, conservationists, and extension agents in planning the use of the soils for pasture and hay crops. Some yield estimates are provided in animal unit months (AUM), or the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

The table lists the pasture and hayland suitability group for each soil. These groups are also listed under the heading "Interpretive Groups." Soils assigned to the same suitability group require the same general management and have about the same potential

productivity. The pasture and hayland suitability groups are described in the following paragraphs.

Soils assigned to group A have few limitations affecting the management and growth of climatically adapted plants.

Soils in group A-1 are deep or very deep and are well drained or moderately well drained. The available water capacity ranges from moderate to very high. Slopes range from 0 to 18 percent. Plants on these soils respond well to additions of lime. Frequent applications may be needed to maintain an adequate pH level. A low pH level in the subsoil shortens the life of some deep-rooted legumes.

Soils in group A-2 are deep or very deep and are well drained or moderately well drained. The available water capacity ranges from moderate to very high. Slopes range from 18 to 25 percent. Plants on these soils respond well to additions of lime. Frequent applications may be needed to maintain an adequate pH level. A low pH level in the subsoil shortens the life of some deep-rooted legumes. The slope may interfere with clipping, mowing, and spraying for weed control. The slope also increases the hazard of erosion if the areas are overgrazed or cultivated for reseeding. The soils in this group are suited to no-till reseeding and interseeding.

Soils in group A-3 are deep or very deep and are well drained or moderately well drained. The available water capacity ranges from moderate to very high. Slopes range from 25 to 40 percent. These soils are not suited to pasture or hay, but some grass pasture is produced.

Soils in group A-4 are deep or very deep and are well drained or moderately well drained. They have stones and boulders on the surface that preclude the use of hay-making equipment. Slopes range from 0 to 40 percent.

Soils in group A-5 are well drained or moderately well drained and are subject to flooding. The available water capacity ranges from moderate to very high. Slopes range from 0 to 18 percent. Grazing is limited during periods of stream overflow. Floodwater can deposit sediments that lower the quality of forage in areas of these soils.

Soils in group A-6 are deep or very deep, are well drained or moderately well drained, and are subject to frost action. The available water capacity ranges from moderate to very high. Slopes range from 0 to 18 percent. Frost action can damage legume stands. Mixing fibrous-rooted grasses with the legumes and using proper grazing management methods help to prevent the damage caused by frost action.

Soils in group B have limited growth and production potential because of droughtiness.

Soils in group B-1 are deep or very deep and are well drained or moderately well drained. The available water capacity is low or very low. Slopes range from 0 to 25 percent. The limited available water capacity restricts forage growth and production.

Soils in group B-2 are deep or very deep and are well drained or moderately well drained. The available water capacity is low or very low. Slopes range from 25 to 40 percent. The limited available water capacity restricts forage growth and production.

Soils in group B-3 are well drained to somewhat poorly drained. They are subject to flooding. Slopes range from 0 to 6 percent.

Soils in group B-4 are deep or very deep and are well drained or moderately well drained. They are in areas of reclaimed mines. The available water capacity is low or very low. Slopes range from 0 to 25 percent. The substratum has a high content of rock fragments. The root zone ranges from 20 to 30 inches.

Soils in group C are wet because of a seasonal high water table.

Soils in group C-1 are deep or very deep and are somewhat poorly drained to very poorly drained. Slopes range from 0 to 12 percent. These soils normally respond well to subsurface drainage.

Soils in group C-2 are deep or very deep and are somewhat poorly drained to very poorly drained. They have a seasonal high water table, which restricts the growth of deep-rooted forage plants or species that have a taproot. Shallow-rooted species grow best on these soils. Subsurface drains are used to lower the seasonal high water table. The effectiveness of subsurface drainage is typically restricted by the permeability of the subsoil, by a high content of clay in the subsoil, or by a fragipan. Slopes range from 0 to 12 percent.

Soils in group C-3 are somewhat poorly drained to very poorly drained and are subject to flooding. The soils have a seasonal high water table, which restricts the rooting depth of forage plants. Shallow-rooted species grow best on these soils. The available water capacity ranges from moderate to very high. Slopes range from 0 to 6 percent. Grazing is limited during periods of stream overflow.

Soils in group D have a high content of organic matter.

Soils in group D-1 formed entirely or partially in organic material. Slopes range from 0 to 2 percent.

Soils in group E are shallow soils in which root growth is restricted to a depth of less than 20 inches.

Soils in group E-1 are shallow or very shallow. The available water capacity is low or very low. Slopes range from 0 to 25 percent. The limited available water

capacity restricts forage production. These soils are well suited to native warm-season grasses.

Soils in group E-2 are shallow or very shallow or have a high bulk density and cobbles and stones in the upper part. The available water capacity is low or very low. Slopes range from 25 to 40 percent. Shallow-rooted species should be selected for planting in areas of these soils.

Soils in group E-3 have a high bulk density and cobbles and stones in the upper part. The available water capacity is low or very low. Slopes range from 0 to 25 percent.

Soils in group F have a root zone that extends to a depth of 20 to 40 inches. These soils are better suited to forage species that do not have a taproot than to other species.

Soils in group F-1 are moderately deep and are well drained or moderately well drained. Slopes range from 0 to 25 percent.

Soils in group F-2 are moderately deep and are well drained or moderately well drained. Slopes range from 25 to 40 percent. These soils are generally not suited to hay.

Soils in group F-3 are well drained or moderately well drained. They are moderately deep to a fragipan. Slopes range from 0 to 25 percent.

Soils in group F-4 are well drained or moderately well drained. They are moderately deep to a fragipan. Slopes range from 25 to 40 percent.

Soils in group F-5 are well drained or moderately well drained. Rooting depth is restricted in the subsoil by a high bulk density, a high content of clay, slow permeability, or a combination of these factors. Slopes range from 0 to 25 percent.

Soils in group F-6 are well drained or moderately well drained. Rooting depth is restricted in the subsoil by a high bulk density, a high content of clay, slow permeability, or a combination of these factors. Slopes range from 25 to 40 percent.

Soils in group F-7 are somewhat poorly drained to very poorly drained. A high content of clay in the subsoil and very slow permeability restrict the rooting depth of forage plants. Slopes range from 0 to 12 percent.

Soils in group G have chemical properties that are unfavorable for many climatically adapted plants.

Soils in group G-1 are well drained or moderately well drained and are shallow or moderately deep to toxic spoil from surface mining operations. The available water capacity is low or very low in the root zone. Slopes range from 0 to 25 percent.

Soils in group G-2 are well drained or moderately well drained and are shallow or moderately deep to toxic spoil from surface mining operations. Slopes range from 25 to 40 percent.

Soils in group H are toxic or are too steep for forage production.

Soils in group H-1 are toxic as a result of surface mining operations or have slopes of 40 percent or more. These soils generally are not suited to pasture and hay.

The local office of the Natural Resources Conservation Service or the Ohio State University Extension can provide additional information about forage yields in the county.

Landscape Plantings, Windbreaks, and Environmental Plantings

Information about the relationship between soils and the selection of landscaping materials can help the user save money by preventing plant loss. The four soil characteristics that most affect the selection of plants for landscaping purposes are texture, drainage, available water capacity, and reaction in the subsoil. Information on these properties is provided under the heading “Detailed Soil Map Units,” in the series descriptions under the heading “Soil Series and Their Morphology,” and in various tables. This information can be used to help determine which plants are most suitable for use in a specific area.

Texture refers to the percentage of sand, silt, and clay in the soil. Generally, soils that have less than 40 percent clay in the subsoil and that have a low content of rock fragments provide the best environment for root development.

Drainage depends primarily on the position of the soil on the landscape. Much of the rainwater and snowmelt runs off the higher or more sloping, better drained areas and onto the lower and/or flatter areas. A well drained soil is typically characterized by yellowish or brown colors and little or no gray. The wetter the soil, the higher the percentage of gray colors; poorly drained or very poorly drained soils are dominantly gray. Subsurface drainage can lower the water table, but installation may be difficult and maintenance can be costly. In areas where the water table is close to the surface, plants that grow well in wet conditions should be selected.

Available water capacity refers to the capacity of the soil to hold water and make it available for use by most plants. Available water capacity is measured to a depth of 60 inches or to the depth of a root-limiting layer, such as bedrock, dense glacial till, sand and gravel, or a fragipan. Generally, the shallower the soil is to a root-limiting layer, the lower the available water capacity. In areas where the soils have a low or moderately low available water capacity, plants that tolerate droughty conditions should be selected.

Reaction refers to the acidity or alkalinity (pH) of the soil. The pH of the surface layer can be modified relatively easily by the addition of lime or sulfur, but it is almost impossible to alter the pH of the subsoil. Although many plants grow well within a wide range in pH, some plants, such as azaleas and rhododendrons, require an acid subsoil.

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Table 12 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in table 12 are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Ohio State University Extension or from a commercial nursery.

Woodland Management and Productivity

Rich Cappell, service forester, Ohio Department of Natural Resources, Division of Forestry, helped prepare this section.

Less than 25 percent of Fairfield County is wooded (Dennis and Birch, 1981). About 81,339 acres of the forestland occurs as privately owned stands or as public lands. The public forests are in the Christmas Rocks Nature Preserve, Wahkeea Nature Preserve, and Barneby Center/Columbus, Metropolitan Park District, Slate Run, and Chestnut Ridge Parks.

Most of the wooded acreage occurs as areas of steep or very steep soils that formed in material weathered from the underlying siltstone, sandstone, and shale bedrock. The most extensive of these soils are in areas of the Shelocta-Berks-Gilpin association, which is described under the heading “General Soil Map Units.” A number of smaller woodlots are in the glaciated part of the county, on farms or along steep areas around creeks. These woodlots range in size from 1 to 10 acres. The acreage of woodland in the county has increased in recent years, particularly in the steep and very steep areas, where the soils are not well suited to cultivated crops or hay and are reverting to woodland.

Most of the forests in Fairfield County support mixed hardwoods, predominantly oaks; however, five major forest types occur in the county. These are (1) oak-hickory, (2) mixed hardwoods, (3) elm-ash-maple, (4) pine-hardwoods, and (5) eastern redcedar. These are the five major forest type groups throughout the Central Region of the United States (Barnet, 1962; Braun, 1950; Eyre, 1980; USDA/NRCS, National Forestry Manual).

The oak-hickory forest type, sometimes called “upland oak,” makes up the largest area of woodland in the county. This group is dominantly white oak, black oak, scarlet oak, chestnut oak, red oak, and hickories. Other species that are common are soft maple, elm, ash, and tuliptree. Scarlet oak and chestnut oak are typically on the poorer growing sites, such as sharp ridges and south- and west-facing hillsides. Other oak species occur on all other growing sites and grade into the mixed hardwood forest type on the moist, well drained soils.

The mixed hardwoods forest type, often called “mixed mesophytic” (Barnet, 1962; Braun, 1950), consists mainly of sugar maple, beech, elm, ash, and tuliptree and associated species, including basswood, blackgum, and black walnut. Oak and hickory are common, and hemlock occurs in a few places. The mixed hardwood forest type requires moist but well drained soils. Examples are soils on hillsides, in coves, and on north- or east-facing benches (fig. 17).

The elm-ash-maple forest type occurs along the Hocking River and other major streams in the county. This forest type is often called “bottom-land hardwoods.” Tree species include American elm, red maple, silver maple, cottonwood, sycamore, and box elder. Common associated species include pin oak, ash, willow, walnut, and mixed oak species.

In Fairfield County, the pine-hardwoods forest type is of minor importance. This group is dominantly Virginia pine and mixed oaks, but shortleaf pine and/or pitch pine can occur along with or in place of the Virginia pine. This forest type typically occurs on the drier sites, such as ridges, the upper slopes, and in south- and west-facing areas.

The eastern redcedar forest type is of small economic consequence in Fairfield County. Redcedar occurs either in poor stands or mixed with hardwoods. Typically, this forest type occurs as scattered stands within areas of the other forest types or, in the western

Figure 17.—A stand of tuliptree in an area of Shelocta silt loam, 15 to 25 percent slopes.

part of the county, in areas of former farmland that are reverting to forestland.

Pine plantations are rapidly becoming economically important in the county. The main species is eastern white pine, but other pine species, such as red pine and shortleaf pine, also have been planted. Pine can be planted and grown on many types of soils and in many areas of the county. The pine is used for Christmas trees and nursery stock.

Beginning in the 1800s, timber stands in the survey area were abused. Early logging operations removed only the best and most usable trees of the preferred species—for example, oak for railroad ties and tuliptree for building material. Poorly formed trees, low-quality trees, hollow trees, and species that had no merchantable value were left in the woods. These "high grading" cutting practices, along with destructive forest fires, have severely reduced the quality of the timber stands in the county. Although some "high grading" is still practiced, much of the county's woodland is under good timber management. Also, forest fires are generally controlled before too much damage occurs.

Good management of timber stands and proper timber harvesting methods involve the use of timber stand improvement practices, timber stand thinnings, improvement cutting, and reproductive harvesting using even-aged or uneven-aged cutting techniques. The use of these practices depends on the age of the stand, the type of timber, the quality and condition of the individual trees, the type of soil, and the aspect, or direction of exposure, of the site.

The productivity of soils used as woodland can vary. The factors that influence the growth of trees are almost the same as those that influence the production of annual crops and pasture. Tree roots

extend deeper into the soil than the roots of crops and pasture plants. The aspect of the site and the position of the soil on the landscape also are important. Other properties to be considered are the slope, the degree of past erosion, soil reaction, the thickness of the surface layer, and the fertility level. The best sites for woodland are generally on the lower parts of the slopes and in coves; the poorer sites are generally on the upper parts of the slopes and on ridges. Furthermore, the best sites are mainly on north- and east-facing slopes (Braun, 1950; Carmean, 1967; USDA/NRCS, National Forestry Manual).

Site-quality differences associated with aspect are slight in areas where slopes are gentle. In steep areas, however, site-index values are much higher on northeast-facing slopes than on southwest-facing slopes (Braun, 1950; Carmean, 1967; USDA/NRCS, National Forestry Manual).

On southwest-facing slopes, site quality decreases as the slope increases. The differences in site quality associated with gradient are less pronounced on southeast and northwest aspects. On northeast-facing slopes, the values even increase slightly as the slope increases.

The position of the soil on the landscape is important in determining the amount of moisture available for tree growth. The amount of soil moisture generally increases as elevation decreases, partly because of downslope seepage. Also, soils on the lower parts of the slope are generally deeper than those on the upper parts, lose less moisture through evaporation, and have a somewhat lower temperature. Concave areas are better sites for woodland than convex areas, where surface water runs off more rapidly. Ridges and the upper slopes generally are convex, whereas the lower slopes and the footslopes are commonly concave.

The slope is an important factor affecting woodland management. The use of equipment is severely restricted in steep or very steep areas. As the slope increases, the rate of water infiltration decreases and the runoff rate and the hazard of erosion increase.

Erosion-control measures are needed during and after the harvest. Erosion reduces the volume of soil available for water storage. Severe erosion removes the surface layer and exposes the subsoil. Because the subsoil is commonly less porous than the surface layer, the runoff rate increases and the rate of water infiltration and the available water capacity decrease. Both tree growth and natural reseeding are adversely affected by severe erosion. The hazard of erosion is generally more severe along poorly located skid trails and haul roads than in other parts of the forest. This hazard can be reduced by constructing effective water bars on the logging trails and by reseeding the trails.

The thickness of the surface layer affects tree height more significantly than any other single soil or topographic feature. The thickness of the surface soil and the texture of the subsoil are affected by landscape position, aspect, and the shape and steepness of slopes (Braun, 1950; Carmean, 1967; USDA/NRCS, National Forestry Manual).

Soil reaction and fertility influence tree growth and the suitability of the soils for different kinds of trees. In general, trees grow more slowly on the less fertile soils, but fertility has a major effect on tree production in areas where the soils are deficient in critical nutrients.

Management of riparian corridors has become important in recent years. This management emphasizes stabilizing and leaving intact buffer strips of at least 35 feet on each side of perennial watercourses.

Christmas trees are grown in some areas of the county. They can grow well on many of the soils but are adversely affected by various factors. The combination of soil conditions, topographic factors, climatic factors, and biotic agencies prevailing in an area constitute the site factors of that area. These site factors, along with ecological requirements of the species, should be carefully considered in order to ensure successful establishment, survival, and growth (Carmean, 1967).

Additional information regarding the management of woodland is available from the Ohio Department of Natural Resources, Division of Forestry; the Ohio State University Extension; and the Natural Resources Conservation Service.

The tables described in this section can help woodland owners or managers plan the use of soils for wood crops. The tables rate the soils according to the limitations that affect various aspects of woodland management and show the potential productivity of the soils for wood crops.

In tables 13a, 13b, and 13c, interpretive ratings are given for various aspects of woodland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable,

and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified forest management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Ratings in the column *erosion hazard* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *harvest equipment operability* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for site preparation* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer,

content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

In table 14, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is provided in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Recreation

The soils of the survey area are rated in tables 15a and 15b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 15a and 15b can be supplemented by other information in this survey, for example, interpretations for construction materials, building site development, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas.

The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Fairfield County supports a wide variety of wildlife. Some of the more common birds that inhabit the county are bobwhite quail, pheasant, wild turkey, mourning dove, ruffed grouse, common crow, pileated woodpecker, red-tailed hawk, great horned owl, meadowlark, bobolink, and many other species of songbirds. Mammals include cottontail rabbit, gray squirrel, fox squirrel, gray fox, red fox, whitetail deer, raccoon, woodchuck, mink, and beaver.

The county also has a wide variety of wildlife habitats, including openland, woodland, and riparian areas along rivers and streams.

Upland wildlife habitat is made up of both openland and woodland. The major soils in the area of upland wildlife habitat include Gilpin, Shelocta, Cruze, and Wellston soils in the hills and Cardington and Bennington soils on the till plains. Including grasses and legumes in the cropping sequence, applying a system of conservation tillage, constructing ponds, and planting trees and shrubs can improve the habitat for openland wildlife. Applying measures that improve timber stands, excluding livestock from wooded areas, and planting trees and shrubs can improve the habitat for woodland wildlife.

The major riparian areas in the county are along the Hocking River, Clear Creek, Salt Creek, and Walnut Creek. The dominant soils in these areas include Newark, Gessie, Rossburg, and Chagrin soils. Stabilizing streambanks, building nest boxes for wood ducks, and planting trees and shrubs can improve the riparian habitat.

Eroded soils can be developed into habitat for upland wildlife by planting grasses and legumes and shrubs. These plantings provide food and cover for wildlife and help to control erosion.

Creating special habitat through the use of artificial nesting structures, feeding stations, food patches, and wildflowers can attract many different kinds of songbirds.

Additional information on the development of wildlife habitat is available from the Ohio Department of Natural Resources, Division of Wildlife, and the Natural Resources Conservation Service.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 16, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, rye, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, bromegrass, clover, timothy, orchardgrass, crown vetch, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, indiangrass, fescue, lambsquarters, wheatgrass, and nightshade.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are American plum, redosier dogwood, serviceberry, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, hemlock, spruce, fir, cedar, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, bulrushes, arrowhead, cattails, waterplantain, wild millet, wildrice, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of

deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for construction materials, building site development, sanitary facilities, agricultural waste management, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; evaluate sites for agricultural waste management; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Construction Materials

Tables 17a and 17b give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 17a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or

below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

The soils are rated *good, fair,* or *poor* as potential sources of reclamation material, roadfill, and topsoil. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, or topsoil. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Building Site Development

Fred Gurile, P.S., urban technician, Fairfield County Soil and Water Conservation District, helped prepare this section.

As a result of a major increase in population since about 1950 (U.S. Department of Commerce, 1990), a very large acreage of farmland in Fairfield County has been converted to urban uses, especially in the northwestern part of the county (fig. 18). Many soil properties and site characteristics, such as depth to a seasonal high water table, permeability, depth to bedrock, and slope, can limit urban development. If important soil features are not adequately considered, wet basements, improper functioning of onsite sanitary systems, erosion and stability problems, and flooding can result.

In sloping areas, erosion is a hazard during construction. The hazard of erosion increases as the slope increases and as vegetation is removed. The hazard of erosion caused by runoff can be reduced by maintaining a cover of vegetation during construction. Removing the topsoil or mixing it into the subsoil can inhibit the regeneration of new plant cover.

Proper landscaping can improve building sites and protect onsite sanitary facilities by controlling runoff. Keeping water away from the foundations of buildings and from sanitary absorption fields can increase the life expectancy of the structures. Before construction begins, the water supply, the adequacy of outlets for foundation drains and basement drains, and the availability of outlets for perimeter drains around septic tank absorption fields should be evaluated.

Figure 18.—Urban encroachment in an area of Centerburg silt loam, 2 to 6 percent slopes.

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 18a and 18b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting

capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 19a and 19b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is

evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper

areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Agricultural Waste Management

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Table 20 shows the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of these tables, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the table are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation).

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye

used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Application of sewage sludge not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge. Permanently frozen soils are unsuitable for waste treatment.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

Water Management

Tables 21a and 21b give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; constructing grassed waterways; constructing terraces and diversions; and drainage. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They

indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of wind erosion, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics. The results of these tests are available at The Ohio State University, School of Natural Resources, Columbus, Ohio; the Ohio Department of Natural Resources, Division of Soil and Water Conservation, Columbus, Ohio; and the Natural Resources Conservation Service, State Office, Columbus, Ohio.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

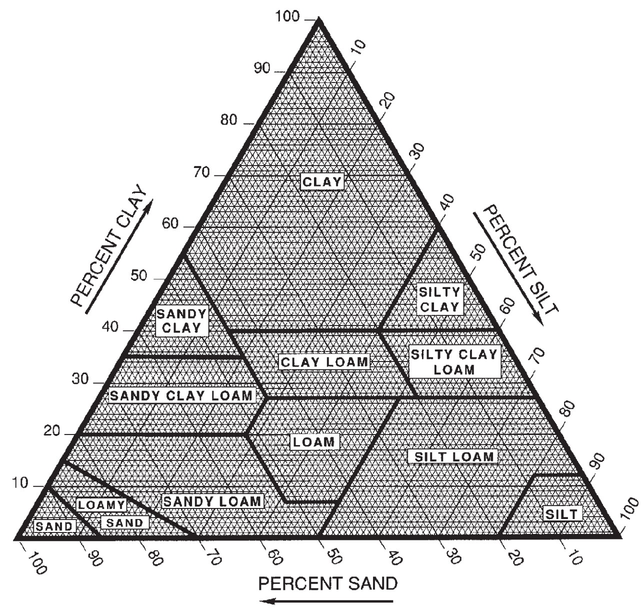

Figure 19.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

Engineering Index Properties

Table 22 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter (fig. 19). "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and

maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 23 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 23, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume

change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on the basis of measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; *high*, 6 to 9 percent; and *very high*, greater than 9 percent.

Erosion factors are shown in table 23 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. Descriptions of these groups are available in the National Soil Survey Handbook (USDA, 2003).

Chemical Properties

Table 24 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Water Features

Table 25 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four

groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 25 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Also indicated is the *kind* of water table—that is, apparent or perched. An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 25 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 26 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, fragipans, and dense layers. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Physical and Chemical Analyses of Selected Soils

Several of the soils in Fairfield County were sampled and subsequently analyzed by the Soil Characterization Laboratory, School of Natural Resources, The Ohio State University, Columbus, Ohio. The physical and chemical data obtained from these analyses include particle-size distribution, reaction, organic matter content, extractable cations, and calcium carbonate equivalent. The collected data were used to classify and correlate the soils sampled. They were also used for evaluating the behavior of these soils under various land use situations. Seventeen pedons were selected as representative of their respective soil series. These pedons are described in the section “Soil Series and Their Morphology.” The names of the sampled soils and their laboratory identification numbers are: Aetna (LC-35), Alford (FA-38), Canal (FA-36), Cardington (FA-71), Carlisle (FA-41), Fox (FA-32), Homewood (FA-40), Jeneva (FA-29), Marengo (FA-30), McGary (FA-46), Miamian (FA-61), Ockley (FA-49,50), Pewamo (FA-37), Rockmill (FA-35), Rossburg (FA-43), Tarlton (PY-35,36), and Thrifton (FA-33).

In addition to the data from Fairfield County, laboratory data are available from nearby or adjacent counties that have many of the same soils. The data from these counties and from Fairfield County are on file at the School of Natural Resources, The Ohio State University, Columbus, Ohio; the Ohio Department of Natural Resources, Division of Soil and Water Conservation, Columbus, Ohio; and the Natural Resources Conservation Service, State Office, Columbus, Ohio.

Engineering Index Test Data

Engineering index test data are available for several pedons from Fairfield County and from several nearby or adjacent counties. These pedons were analyzed for engineering properties by the Ohio Department of Transportation, Division of Highways, Bureau of

Testing, Soils Foundation Section. The available test data are on file at the Natural Resources Conservation Service, MLRA Project Office, Wilmington, Ohio; The Ohio State University, School of Natural Resources, Columbus, Ohio; the Ohio Department of Natural Resources, Division of Soil and Water Conservation, Columbus, Ohio; and the Natural Resources Conservation Service, State Office, Columbus, Ohio.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 27 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalf (*Ud*, meaning humid, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Typic Hapludalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 1998). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

Aetna Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Recent alluvium over glaciolacustrine deposits
Landform: Flood plains and alluvial fans
Slope: 0 to 2 percent
Adjacent soils: Patton, Euclid, and Beaucoup

Taxonomic classification: Fine-silty, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon

Aetna silt loam, occasionally flooded, about 2.5 miles east-northeast of Kirkersville, in Union Township, Licking County, Ohio; about 2,100 feet north and 2,250 feet east of the southwest corner of sec. 5, T. 17 N., R. 13 W.

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, brown (10YR 6/3) dry; weak thin platy structure parting to weak fine and very fine granular; friable; many fine and coarse roots; slightly acid; gradual smooth boundary.

Bw—7 to 15 inches; brown (10YR 4/3) silt loam; moderate medium subangular blocky structure; friable; common fine and coarse roots; common faint dark grayish brown (10YR 4/2) organic coatings on faces of peds; moderately acid; gradual wavy boundary.

Btg—15 to 23 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine and medium subangular blocky structure; friable; few fine roots; few faint brown (10YR 4/3) and few distinct dark yellowish brown (10YR 4/4) clay films on vertical faces of peds; common medium faint dark gray (10YR 4/1) iron depletions and few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly acid; clear wavy boundary.

2Ab—23 to 34 inches; very dark grayish brown (10YR 3/2) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct brown (10YR 4/3) coatings on vertical faces of peds; common fine faint dark gray (10YR 4/1) iron depletions and few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine faint very dark brown (10YR 2/2) iron-manganese stains on faces of peds; neutral; gradual wavy boundary.

2Bwb1—34 to 48 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; many coarse prominent dark gray (5YR 4/1) iron depletions and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.

2Bwb2—48 to 63 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure parting to weak medium and coarse subangular blocky; firm; many coarse distinct gray (10YR 5/1) iron depletions and many coarse distinct dark yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; few fine distinct very dark brown (10YR 2/2) iron-manganese stains on faces of peds; neutral; gradual wavy boundary.

2C—63 to 80 inches; dark yellowish brown (10YR 4/4) silt loam; massive; firm; many coarse distinct gray (10YR 5/1) iron depletions and many coarse distinct dark yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; few fine distinct very dark brown (10YR 2/2) iron-manganese stains on faces of peds; neutral.

Range in Characteristics

Thickness of the solum: 20 to 36 inches of recent alluvium over buried mollic surface layer
Thickness of the buried mollic epipedon: 10 to 24 inches
Content of rock fragments: A and B horizons—0 to 5 percent; 2Ab and 2Bwb horizons—0 to 15 percent; 2C horizon—0 to 25 percent

Ap horizon:
Color—hue of 10YR, value of 4, and chroma of 2 or 3
Texture—silt loam

Bw or Btg horizon:
Color—hue of 10YR, value of 4, and chroma of 2 or 3
Texture—silt loam, loam, or silty clay loam; thin subhorizons of sandy loam and fine sandy loam

2Ab horizon:
Color—hue of 10YR or N, value of 2, 2.5, or 3, and chroma of 0 to 2
Texture—silt loam or silty clay loam

2Bwb horizon:
Color—hue of 10YR, 2.5Y, or N, value of 4 or 5, and chroma of 0 to 4
Texture—silt loam, silty clay loam, loam, or clay loam; thin subhorizons of silty clay

2C horizon:
Color—hue of 10YR, 2.5Y, or 5Y, value of 4 or 5, and chroma of 1 to 4
Texture—silty clay loam, silt loam, clay loam, loam, or sandy loam or the gravelly analogs of these textures

Alford Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Loess
Landform: Loess hills

Position on the landform: Summits, footslopes, backslopes, and shoulders
Slope: 2 to 12 percent
Adjacent soils: Cincinnati, Wellston, and Zanesville

Taxonomic classification: Fine-silty, mixed, superactive, mesic Ultic Hapludalfs

Typical Pedon

Alford silt loam, 2 to 6 percent slopes, about 5 miles east of Lancaster, in Pleasant Township, Fairfield County, Ohio; about 1,000 feet north and 1,700 feet west of the southeast corner of sec. 35, T. 15 N., R. 18 W.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, very pale brown (10YR 7/3) dry; moderate fine granular structure; friable; many fine roots; neutral; abrupt smooth boundary.
BE—9 to 13 inches; brown (10YR 5/3) silt loam; moderate medium platy structure parting to weak fine subangular blocky; firm; common fine roots; common faint dark grayish brown (10YR 4/2) organic coatings on faces of peds; moderately acid; clear smooth boundary.
Bt1—13 to 22 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; common medium roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; strongly acid; gradual smooth boundary.
Bt2—22 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; common medium roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium faint brown (10YR 5/3) clay depletions on faces of peds; strongly acid; gradual smooth boundary.
Bt3—32 to 46 inches; yellowish brown (10YR 5/4) silt loam; moderate coarse subangular blocky structure; friable; few fine roots; many distinct light yellowish brown (10YR 6/4) clay films on faces of peds; common fine distinct black (10YR 2/1) iron and manganese accumulations on faces of peds; strongly acid; clear smooth boundary.
BC—46 to 62 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; friable; few fine roots; strongly acid; clear smooth boundary.
C—62 to 76 inches; dark yellowish brown (10YR 4/4) silt loam; massive; friable; common fine distinct grayish brown (10YR 5/2) iron depletions with common fine faint yellowish brown (10YR 5/4) masses of iron accumulation in cracks; strongly acid; clear smooth boundary.
2Eb—76 to 84 inches; light yellowish brown (10YR 6/4) silt loam; weak thick platy structure; friable; 5 percent rock fragments, mostly pebbles of sandstone and siltstone; strongly acid.

Range in Characteristics

Thickness of the solum: 44 to 80 inches
Depth to the base of the argillic horizon: 44 to 80 inches
Depth to bedrock: More than 80 inches
Thickness of the loess mantle: 60 to 120 inches

Ap horizon:
Color—hue of 10YR, value of 4, and chroma of 2 or 3
Texture—silt loam

Bt horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6
Texture—silt loam or silty clay loam

C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—silt loam

Amanda Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Till
Landform: Wisconsinan till plains
Position on the landform: Summits, shoulders, footslopes, and backslopes
Slope: 2 to 35 percent
Adjacent soils: Bennington, Cardington, Loudonville, and Ockley

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Amanda silt loam, 6 to 12 percent slopes, eroded, about 6 miles northeast of Lancaster, in Pleasant Township, Fairfield County, Ohio; about 1,200 feet south and 1,000 feet west of the northeast corner of sec. 15, T. 15 N., R. 18 W.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, very pale brown (10YR 7/3) dry; weak fine and medium granular structure; friable; common fine roots; common distinct inclusions of yellowish brown (10YR 5/4) subsoil material; 5 percent rock fragments, mostly pebbles of sandstone but some igneous pebbles; neutral; abrupt smooth boundary.

Bt1—8 to 18 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; firm; common fine roots; common faint brown (10YR 4/4) clay films on faces of peds; 5 percent rock fragments, mostly pebbles of sandstone but some igneous pebbles; very strongly acid; gradual smooth boundary.

Bt2—18 to 29 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse subangular blocky structure; firm; few fine roots; common faint brown (10YR 4/4) clay films on faces of peds; 5 percent rock fragments, mostly pebbles of sandstone but some igneous pebbles; very strongly acid; clear smooth boundary.

Bt3—29 to 34 inches; yellowish brown (10YR 5/4) clay loam; weak coarse subangular blocky structure; firm; few fine roots; common faint brown (10YR 4/4) clay films on faces of peds; 5 to 10 percent rock fragments, mostly pebbles of sandstone but some igneous pebbles; very strongly acid; gradual wavy boundary.

BC1—34 to 46 inches; yellowish brown (10YR 5/4) loam; weak coarse subangular blocky structure; firm; few fine roots; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; few fine prominent yellowish red (5YR 5/8) masses of iron and manganese accumulation; 5 percent rock fragments, mostly pebbles of sandstone but some igneous pebbles; strongly acid; gradual wavy boundary.

BC2—46 to 55 inches; yellowish brown (10YR 5/4) loam; weak coarse subangular blocky structure; firm; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; few fine prominent yellowish red (5YR 5/8) masses of iron and manganese accumulation; 5 percent rock fragments, mostly pebbles of sandstone but some igneous pebbles; slightly alkaline; gradual wavy boundary.

C—55 to 80 inches; brown (10YR 4/3) loam; massive; very firm; few medium distinct gray (10YR 5/1) iron depletions and few medium faint yellowish brown (10YR 5/4) masses of iron accumulation; 5 percent rock fragments, mostly pebbles of sandstone but some igneous pebbles; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: Typically 40 to 72 inches; 24 to 55 inches in pedons in eroded areas
Depth to the base of the argillic horizon: 25 to 52 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 40 to 72 inches
Thickness of the loess mantle: Less than 18 inches
Content of rock fragments: Ap horizon and the upper part of the Bt horizon—0 to 10 percent; lower part of the Bt horizon—2 to 15 percent; C horizon—5 to 15 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—silt loam, silty clay loam, or loam

Bt horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6
Texture—loam, clay loam, silty clay loam, or silt loam

C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—loam or silt loam

Beaucoup Series

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Recent alluvium
Landform: Flood plains
Slope: 0 to 2 percent
Adjacent soils: Eel, Gessie, and Shoals

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls

Typical Pedon

Beaucoup silty clay loam, occasionally flooded, about 4 miles northwest of Lancaster, in Greenfield Township, Fairfield County, Ohio; about 1,600 feet north and 2,300 feet west of the southeast corner of sec. 28, T. 15 N., R. 19 W.

Ap—0 to 13 inches; very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; weak coarse prismatic structure parting to weak coarse granular in the upper part and moderate medium angular blocky in the lower part; friable; common fine roots; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; abrupt smooth boundary.

A—13 to 20 inches; black (10YR 2/1) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common fine roots; common distinct yellowish brown (10YR 5/4) masses of iron accumulation along old root channels; many faint black (7.5YR 2.5/1) organic coatings on faces of peds; neutral; clear wavy boundary.

Bg1—20 to 31 inches; dark gray (5Y 4/1) silty clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; firm; common fine roots; many medium prominent yellowish brown (10YR 5/4) and light olive brown (2.5Y 5/6) masses of iron accumulation lining pores; many prominent dark gray (7.5YR 4/1) organic coatings on faces of peds; prominent very dark gray (7.5YR 3/1) krotovina; neutral; clear wavy boundary.

Bg2—31 to 46 inches; dark gray (10YR 4/1) silty clay loam; moderate medium angular blocky structure; firm; common fine roots; many medium prominent light olive brown (2.5Y 5/6) masses of iron accumulation; faint dark gray (7.5YR 4/1) organic coatings on faces of peds; faint very dark gray (7.5YR 3/1) krotovina; neutral; clear wavy boundary.

BCg—46 to 54 inches; dark grayish brown (2.5Y 4/2) silt loam; moderate coarse prismatic structure; firm; laminated; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; many distinct dark gray (7.5YR 4/1) organic coatings; neutral; clear wavy boundary.

Cg—54 to 80 inches; dark gray (7.5YR 4/1) silty clay loam; massive; laminated; firm; few distinct dark grayish brown (2.5Y 4/2) streaks of iron depletions; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 35 to 65 inches
Thickness of the mollic epipedon: 10 to 24 inches
Depth to carbonates: More than 40 inches
Depth to bedrock: More than 80 inches

Ap or A horizon:
Color—hue of 10YR or N, value of 2 or 3, and chroma of 0 to 2
Texture—silty clay loam

Bg horizon:
Color—hue of 10YR, 2.5Y, 5Y, or N, value of 4 or 5, and chroma of 0 to 2
Texture—silty clay loam, clay loam, silt loam, or loam; thin layers of sandy loam in stratified sediments

Cg horizon:
Color—hue of 10YR, 2.5Y, 5Y, or N, value of 4 or 5, and chroma of 0 to 2
Texture—stratified or laminated silty clay loam, clay loam, silt loam, loam, or sandy loam

Bennington Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Till
Landform: Wisconsinan till plains
Position on the landform: Summits
Slope: 0 to 6 percent
Adjacent soils: Cardington, Centerburg, Condit, Marengo, and Pewamo

Taxonomic classification: Fine, illitic, mesic Aeric Epiaqualfs

Typical Pedon

Bennington silt loam, 0 to 2 percent slopes (fig. 20), about 6 miles northwest of Baltimore, in Liberty Township, Fairfield County, Ohio; about 2,100 feet south and 1,300 feet east of the northwest corner of sec. 29, T. 17 N., R. 19 W.

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; moderate medium granular structure; friable; many fine roots; 5 percent rock fragments, mostly pebbles of shale and sandstone but a few igneous pebbles; neutral; abrupt smooth boundary.

Bt1—9 to 18 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; firm; common fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; many distinct light brownish gray (10YR 6/2) clay depletions on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout; 5 percent rock fragments, mostly pebbles of shale and sandstone but a few igneous pebbles; slightly acid; clear wavy boundary.

Bt2—18 to 28 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; few medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few medium distinct black (10YR 2/1) masses of iron and manganese accumulation; 5 percent rock fragments, mostly pebbles of shale and sandstone

Figure 20.—Profile of a Bennington soil. Bennington soils are somewhat poorly drained. They formed in till. Depth is marked in inches.

but a few igneous pebbles; neutral; clear wavy boundary.

Bt3—28 to 36 inches; yellowish brown (10YR 5/4) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common distinct dark gray (10YR 4/1) clay films on faces of peds; common medium distinct grayish brown (10YR 5/2) iron depletions and prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common medium distinct black (10YR 2/1) masses of iron and manganese accumulation; 5 percent shale, sandstone, and igneous pebbles; slightly alkaline; clear wavy boundary.

BC—36 to 46 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure; firm; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common medium distinct gray (10YR 5/1) iron depletions; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; 10 percent shale, sandstone, and igneous pebbles; slightly effervescent; slightly alkaline; clear wavy boundary.

C1—46 to 50 inches; brown (10YR 4/3) clay loam; massive; firm; common medium faint grayish brown (10YR 5/2) iron depletions on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine distinct light gray (10YR 7/2) weathered limestone fragments; 10 percent shale, sandstone, and igneous pebbles; strongly effervescent; moderately alkaline; abrupt wavy boundary.

C2—50 to 80 inches; brown (10YR 4/3) loam; massive; very firm; 10 percent rock fragments, mostly pebbles of shale and sandstone but a few igneous pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 28 to 48 inches
Depth to the base of the argillic horizon: 24 to 40 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 26 to 46 inches
Content of rock fragments: Ap horizon—0 to 5 percent; Bt horizon—2 to 5 percent above a depth of 20 inches and 2 to 10 percent below a depth of 20 inches; C horizon—3 to 15 percent
Kind of rock fragments: Mostly shale and sandstone; the range includes sandstone, some limestone, and a few crystalline (igneous) pebbles

Ap horizon:
Color—hue of 10YR, value of 4, and chroma of 1 or 2
Texture—silt loam

BE horizon (if it occurs):
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 4
Texture—silt loam, loam, or silty clay loam

Bt horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—silty clay loam, clay loam, clay, or silty clay

C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 1 to 4

Texture—clay loam, loam, silty clay loam, or silt loam

Berks Series

Depth class: Moderately deep
Drainage class: Well drained
Parent material: Residuum derived from thin-bedded siltstone and fine grained sandstone
Landform: Hills
Position on the landform: Backslopes
Slope: 25 to 70 percent
Adjacent soils: Shelocta, Gilpin, and Cruze

Taxonomic classification: Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

Typical Pedon

Berks channery silt loam, in an area of Shelocta-Berks complex, 25 to 40 percent slopes, about 4 miles southwest of Bremen, in Rush Creek Township, Fairfield County, Ohio; about 800 feet north and 2,650 feet west of the southeast corner of sec. 31, T. 16 N., R. 17 W.

A—0 to 2 inches; very dark brown (10YR 2/2) channery silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; very friable; many fine roots; 15 percent siltstone channers; very strongly acid; clear wavy boundary.
AB—2 to 4 inches; brown (10YR 4/3) channery silt loam; weak medium subangular blocky structure; very friable; many fine and medium roots; 15 percent siltstone channers; very strongly acid; clear smooth boundary.
Bw1—4 to 12 inches; yellowish brown (10YR 5/4) channery silt loam; weak medium subangular blocky structure; friable; many fine and medium roots; 20 percent siltstone channers; very strongly acid; clear smooth boundary.
Bw2—12 to 24 inches; yellowish brown (10YR 5/4) extremely channery silt loam; weak coarse subangular blocky structure; very friable; common medium roots; 70 percent siltstone channers; strongly acid; gradual smooth boundary.
Cr—24 to 38 inches; weathered, soft, thin-bedded siltstone bedrock.
R—38 to 40 inches; fractured, hard siltstone bedrock.

Range in Characteristics

Thickness of the solum: 12 to 40 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments: A horizon—10 to 26 percent; Bw horizon—15 to 75 percent; C horizon—35 to 90 percent

A horizon:
Color—hue of 10YR, value of 2 to 5, and chroma of 2 to 4
Texture—channery silt loam

Bw horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture—the channery to extremely channery analogs of silt loam, loam, or silty clay loam

C horizon (if it occurs):
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 8
Texture—the very channery or extremely channery analogs of silt loam or loam

Canal Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Stratified silty and clayey glaciolacustrine material
Landform: Flats on lake plains and terraces
Position on the landform: Summits and treads
Slope: 0 to 2 percent
Adjacent soils: Bennington, Cardington, Patton, and Montgomery

Taxonomic classification: Fine-silty, mixed, active, mesic Aeric Epiaqualfs

Typical Pedon

Canal silt loam, 0 to 2 percent slopes, about 3 miles northeast of Baltimore, in Walnut Township, Fairfield County, Ohio; about 700 feet north and 500 feet west of the southeast corner of sec. 17, T. 16 N., R. 18 W.

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine roots; neutral; abrupt smooth boundary.
Btg—9 to 14 inches; light brownish gray (10YR 6/2) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium faint brown (10YR 5/3) masses of iron accumulation in the matrix; moderately acid; clear wavy boundary.
Bt1—14 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many distinct gray (10YR 5/1) clay films on faces of peds; many medium distinct gray (10YR 5/1) iron depletions in the matrix; many medium distinct yellowish brown (10YR 5/6)

masses of iron accumulation in the matrix; common distinct very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; strongly acid; gradual wavy boundary.

Bt2—24 to 36 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; firm; few fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; many distinct dark gray (10YR 4/1) clay films on vertical faces of peds; many medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear wavy boundary.

BCg—36 to 45 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate very coarse prismatic structure with weak stratification on interiors; firm; common faint gray (10YR 5/1) clay films and very dark gray (10YR 3/1) organo-clay films on vertical faces of peds; common medium faint grayish brown (10YR 5/2) iron depletions in the matrix; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; slightly acid; abrupt wavy boundary.

2C—45 to 60 inches; brown (10YR 4/3) silty clay; massive; laminated; very firm; common medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; common medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; strongly effervescent; slightly alkaline; gradual wavy boundary.

2Cg—60 to 80 inches; dark gray (10YR 4/1) silty clay; massive; laminated; very firm; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 30 to 50 inches
Depth to the base of the argillic horizon: 30 to 50 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: More than 40 inches
Content of rock fragments: Ap, Bt, and 2C horizons—0 to 5 percent

Ap horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2
Texture—silt loam

Btg and Bt horizons:
Color—hue of 10YR, 2.5Y, or 7.5YR, value of 4 to 6, and chroma of 1 to 6
Texture—silt loam or silty clay loam; thin strata of loam, clay loam, or fine sandy loam in some pedons

BCg horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2
Texture—silty clay, clay, or silty clay loam; thin strata of loam or sandy clay loam in some pedons

2C or 2Cg horizon:
Color—hue of 10YR or N, value of 4 or 5, and chroma of 0 to 4
Texture—stratified or laminated silty clay or clay

Cardington Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Till
Landform: Wisconsinan till plains
Position on the landform: Summits, shoulders, footslopes, and backslopes
Slope: 2 to 20 percent
Adjacent soils: Amanda, Bennington, and Pewamo

Taxonomic classification: Fine, illitic, mesic Aquic Hapludalfs

Typical Pedon

Cardington silt loam, 2 to 6 percent slopes, about 4 miles northwest of Baltimore, in Liberty Township, Fairfield County, Ohio; about 150 feet south and 2,300 feet east of the northwest corner of sec. 2, T. 16 N., R. 19 W.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; many fine roots; common faint yellowish brown (10YR 5/4) masses of iron accumulation; 5 percent rock fragments, mostly shale and sandstone but a few igneous fragments; neutral; abrupt smooth boundary.

BE—8 to 10 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; friable; common medium roots; common faint brown (10YR 5/3) clay depletions on faces of peds; 5 percent rock fragments, mostly shale and sandstone but a few igneous fragments; strongly acid; clear smooth boundary.

Bt1—10 to 16 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; few medium roots; many faint brown (10YR 4/3) clay films on faces of peds; few

fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; common faint brown (10YR 5/3) clay depletions; 5 percent rock fragments, mostly shale and sandstone but a few igneous fragments; very strongly acid; clear wavy boundary.

Bt2—16 to 29 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few medium roots; many distinct dark brown (10YR 3/3) clay films on faces of peds; common fine distinct grayish brown (10YR 5/2) iron depletions and prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common distinct very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; 5 percent rock fragments, mostly shale and sandstone but a few igneous fragments; neutral; clear wavy boundary.

BC—29 to 33 inches; yellowish brown (10YR 5/4) clay loam; weak coarse prismatic structure; firm; few medium roots; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium distinct gray (10YR 5/1) iron depletions and common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 5 percent rock fragments, mostly shale and sandstone but a few igneous fragments; slightly effervescent; slightly alkaline; gradual wavy boundary.

C1—33 to 72 inches; brown (10YR 4/3) clay loam; massive; very firm; common medium distinct gray (10YR 5/1) iron depletions and common medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; 5 percent rock fragments, mostly shale and sandstone but a few igneous fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

C2—72 to 80 inches; brown (10YR 4/3) loam; massive; very firm; 5 percent rock fragments, mostly shale and sandstone but a few igneous fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 28 to 50 inches
Depth to the base of the argillic horizon: 20 to 40 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 26 to 45 inches
Content of rock fragments: Ap horizon—0 to 5 percent; Bt horizon—2 to 5 percent above a depth of 20 inches and 2 to 15 percent below a depth of 20 inches; C horizon—2 to 15 percent
Kind of rock fragments: Mostly shale and sandstone fragments; some crystalline (igneous) and limestone pebbles

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

Bt horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—silty clay loam, silty clay, or clay loam

C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4
Texture—clay loam, loam, or silt loam

Carlisle Series

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Organic deposits
Landform: Depressions on Wisconsinan till plains, outwash terraces, and lake plains
Slope: 0 to 2 percent
Adjacent soils: Patton, Rockmill, and Westland

Taxonomic classification: Euic, mesic Typic Haplosaprists

Typical Pedon

Carlisle muck, about 2 miles south of Pickerington, in Violet Township, Fairfield County, Ohio; about 2,600 feet south and 1,700 feet west of the northeast corner of sec. 21, T. 15 N., R. 20 W.

Oap—0 to 12 inches; muck (sapric material), black (N 2/0) broken face and rubbed, very dark gray (10YR 3/1) dry; about 5 percent fiber, 0 percent after rubbing; moderate fine granular structure; very friable; many fine roots; neutral; abrupt smooth boundary.

Oa1—12 to 30 inches; muck (sapric material), dark brown (7.5YR 3/2) broken face and rubbed; about 40 percent fiber broken, less than 10 percent rubbed; moderate coarse subangular blocky structure parting to weak medium platy; friable; many fine and common medium roots; few woody fragments; neutral; clear smooth boundary.

Oa2—30 to 80 inches; muck (sapric material), dark reddish brown (5YR 3/3) broken face, dark brown (7.5YR 3/2) rubbed; about 50 percent fiber broken, 15 percent rubbed; weak thick laminated structure; friable; neutral.

Range in Characteristics

Thickness of the solum: More than 51 inches
Depth to bedrock: More than 80 inches

Surface tier:
Color—hue of 7.5YR, 10YR, or N, value of 2, 2.5, or 3, and chroma of 0 to 4
Texture—muck (sapric material)

Subsurface tier:
Color—hue of 7.5YR or 10YR, value of 2, 2.5, or 3, and chroma of 1 to 3
Texture—dominantly muck (sapric material); thin layers of mucky peat (hemic material) in some pedons

Bottom tier:
Color—hue of 5YR to 10YR, value of 2, 2.5, or 3, and chroma of 1 to 3; redder hues of the less decomposed organic soil material commonly become darker upon brief exposure to air
Texture—dominantly muck (sapric material); thin layers of mucky peat (hemic material) in some pedons

Cedarfalls Series

Depth class: Deep
Drainage class: Well drained
Parent material: Colluvium weathered from sandstone
Landform: Hills
Position on the landform: Backslopes below sandstone bluffs
Slope: 40 to 70 percent
Adjacent soils: Germano, Gilpin, and Shelocta

Taxonomic classification: Sandy, siliceous, mesic Typic Udorthents

Typical Pedon

Cedarfalls coarse sandy loam, in an area of Cedarfalls-Rock outcrop complex, 40 to 70 percent slopes, about 6 miles south of Sugar Grove, in Laurel Township, Hocking County, Ohio; about 1,600 feet south and 2,000 feet east of the northwest corner of sec. 4, T. 12 N., R. 18 W.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) coarse sandy loam, pale brown (10YR 6/3) dry; weak fine granular structure; very friable; many fine and medium roots; 5 percent rock fragments, mostly sandstone and quartzite; strongly acid; clear smooth boundary.
C1—5 to 11 inches; yellowish brown (10YR 5/4) coarse sandy loam; massive; very friable; few fine and medium roots; 5 percent rock fragments, mostly quartzite; strongly acid; clear smooth boundary.
C2—11 to 20 inches; yellowish brown (10YR 5/4) loamy coarse sand; single grained; loose; few fine and medium roots; 10 percent rock fragments, mostly quartzite; very strongly acid; gradual smooth boundary.
C3—20 to 57 inches; light yellowish brown (10YR 6/4) coarse sand; single grained; loose; very strongly acid; abrupt irregular boundary.
R—57 to 60 inches; strong brown (7.5YR 5/8), fractured, hard sandstone.

Range in Characteristics

Depth to bedrock: 40 to 60 inches
Content of rock fragments: A horizon—0 to 10 percent; C horizon (upper part)—0 to 30 percent; C horizon (lower part)—0 to 30 percent

A horizon:
Color—hue of 10YR and value and chroma of 2 or 3
Texture—coarse sandy loam

C horizon:
Color—hue of 10YR or 7.5YR and value and chroma of 4 to 6
Texture—sandy loam or coarse sandy loam in the upper few inches; loamy coarse sand, coarse sand, or sand or the gravelly or stony analogs of these textures in the lower part

Celina Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Thin layer of loess and loamy till
Landform: Wisconsinan till plains
Position on the landform: Summits
Slope: 0 to 6 percent
Adjacent soils: Crosby, Kokomo, and Miamian

Taxonomic classification: Fine, mixed, active, mesic Aquic Hapludalfs

Typical Pedon

Celina silt loam, 2 to 6 percent slopes, about 3.5 miles south of Lithopolis, in Bloom Township, Fairfield County, Ohio; about 1,600 feet north and 1,200 feet west of the southeast corner of sec. 30, T. 14 N., R. 20 W.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam;

moderate medium granular structure; friable; many fine and medium roots; 5 percent rock fragments; neutral; abrupt smooth boundary.

Bt1—9 to 16 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; common medium roots; common distinct brown (10YR 4/3) clay films and brown (10YR 5/3) clay depletions on faces of peds; common distinct dark grayish brown (10YR 4/2) krotovinas; 5 percent rock fragments; strongly acid; clear smooth boundary.

Bt2—16 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate coarse subangular blocky; firm; few medium roots; many distinct light brownish gray (10YR 6/2) clay films on faces of peds; common fine distinct grayish brown (10YR 5/2) and common faint brown (10YR 5/3) iron depletions and common prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common distinct very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; 7 percent rock fragments; strongly acid; clear wavy boundary.

2Bt3—24 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate coarse subangular blocky; firm; few medium roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium distinct gray (10YR 5/1) iron depletions and common yellowish brown (10YR 5/6 and 5/8) masses of iron accumulation in the matrix; common distinct very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; 8 percent rock fragments; neutral; clear wavy boundary.

2BC—30 to 36 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure; firm; few medium roots; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium distinct gray (10YR 5/1) iron depletions and yellowish brown (10YR 5/6) common prominent (10YR 5/8) masses of iron accumulation in the matrix; 8 percent rock fragments; neutral; abrupt wavy boundary.

2Cd—36 to 80 inches; brown (10YR 4/3) loam; massive; firm; 10 percent rock fragments; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to the base of the argillic horizon: 20 to 40 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 18 to 40 inches
Content of rock fragments: Ap horizon—0 to 5 percent; Bt horizon—2 to 10 percent; C horizon—2 to 15 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

Bt horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6
Texture—clay loam, silty clay loam, clay, or silty clay

C horizon (if it occurs):
Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4
Texture—loam, silt loam, or clay loam

Centerburg Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Till
Landform: Wisconsinan till plains
Position on the landform: Summits, footslopes, backslopes, and shoulders
Slope: 2 to 12 percent
Adjacent soils: Bennington, Condit, and Marengo

Taxonomic classification: Fine-loamy, mixed, active, mesic Aquic Hapludalfs

Typical Pedon

Centerburg silt loam, 2 to 6 percent slopes (fig. 21), about 3 miles south of Baltimore, in Pleasant Township, Fairfield County, Ohio; about 200 feet north and 2,250 feet east of the southwest corner of sec. 6, T. 15 N., R. 18 W.

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many fine and medium roots; 5 percent rock fragments; neutral; abrupt smooth boundary.

BE—8 to 13 inches; yellowish brown (10YR 5/4) silt loam; moderate fine subangular blocky structure; firm; common medium roots; common faint brown (10YR 5/3) clay depletions on faces of peds; 5 percent rock fragments; neutral; clear wavy boundary.

Bt1—13 to 19 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky

Figure 21.—Profile of a Centerburg soil. Centerburg soils are moderately well drained. They formed in till. Depth is marked in inches.

structure; firm; common medium roots; few faint pale brown (10YR 6/3) clay films on faces of peds; 5 percent rock fragments; moderately acid; clear wavy boundary.

Bt2—19 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; few medium roots; many faint light brownish gray (10YR 6/2) clay films on faces of peds; few medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; common fine distinct very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; 5 percent rock fragments; strongly acid; clear wavy boundary.

Bt3—24 to 33 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate coarse subangular blocky; firm; few medium roots; many faint light brownish gray (10YR 6/2) clay films on faces of peds; few medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; common fine distinct very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; 5 percent rock fragments; moderately acid; clear wavy boundary.

BC—33 to 46 inches; brown (10YR 4/3) loam; weak coarse prismatic structure; very firm; few medium roots; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium distinct gray (10YR 6/1) iron depletions in the matrix; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 10 percent rock fragments; neutral; clear wavy boundary.

C—46 to 80 inches; brown (10YR 4/3) loam; massive; very firm; common medium distinct gray (10YR 6/1) iron depletions in the matrix; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 10 percent rock fragments; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 30 to 55 inches
Depth to the base of the argillic horizon: 19 to 50 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 26 to 55 inches
Content of rock fragments: A horizon—0 to 10 percent; Bt horizon (upper part)—0 to 10 percent; Bt horizon (lower part)—2 to 15 percent; C horizon—3 to 15 percent
Kind of rock fragments: Mostly sandstone and shale fragments; some igneous and limestone pebbles

Ap horizon:
Color—hue of 10YR, value of 4, and chroma of 2 or 3
Texture—silt loam

Bt horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—silty clay loam, clay loam, loam, or silt loam

C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—loam or silt loam

Chagrin Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Recent, noncalcareous alluvium
Landform: Flood plains
Slope: 0 to 2 percent
Adjacent soils: Newark, Fox, and Ockley

Taxonomic classification: Fine-loamy, mixed, active, mesic Dystric Fluventic Eutrudepts

Typical Pedon

Chagrin silt loam, frequently flooded, about 0.5 mile south of Sugar Grove, in Berne Township, Fairfield County, Ohio; about 750 feet south and 2,050 feet east of the northwest corner of sec. 10, T. 13 N., R. 18 W.

Ap—0 to 8 inches; dark brown (10YR 3/3) silt loam, pale brown (10YR 6/3) dry; weak medium granular structure; friable; common fine and medium roots; neutral; abrupt smooth boundary.

Bw1—8 to 22 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; friable; few fine and medium roots; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation on faces of peds; common dark brown (10YR 3/3) organic stains on faces of peds; neutral; gradual wavy boundary.

Bw2—22 to 36 inches; brown (10YR 4/3) silt loam; weak coarse subangular blocky structure; friable; few fine and medium roots; few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; common faint dark brown (10YR 3/3) organic stains on faces of peds; slightly acid; gradual wavy boundary.

C1—36 to 50 inches; dark yellowish brown (10YR 4/4) loam; massive; friable; very few fine roots; neutral; gradual wavy boundary.

C2—50 to 80 inches; yellowish brown (10YR 5/4), stratified silt loam, loam, and sandy loam; massive; friable; few fine distinct gray (10YR 5/1) iron depletions; slightly acid.

Range in Characteristics

Thickness of the solum: 24 to 48 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: More than 40 inches
Content of rock fragments: Ap and Bw horizons—0 to 15 percent; C horizon—0 to 25 percent

Ap horizon:
Color—hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 to 4
Texture—silt loam

Bw horizon:
Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6
Texture—silt loam, loam, sandy loam, fine sandy loam, clay loam, or silty clay loam

C horizon:
Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6
Texture—silt loam, loam, or sandy loam (ranges from relatively uniform to highly stratified); fine sand, loamy fine sand, gravelly fine sand, or gravelly loamy fine sand below a depth of 40 inches in some pedons

Cincinnati Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Loess over till
Landform: Illinoian till plains
Position on the landform: Summits, footslopes, backslopes, and shoulders
Slope: 6 to 12 percent
Adjacent soils: Alford, Jeneva, and Wellston

Taxonomic classification: Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs

Typical Pedon

Cincinnati silt loam, in an area of Cincinnati-Wellston complex, 6 to 12 percent slopes, eroded, about 4 miles northeast of Bremen, in Rush Creek Township, Fairfield County, Ohio; about 1,600 feet south and 850 feet west of the northeast corner of sec. 1, T. 16 N., R. 17 W.

Ap—0 to 8 inches; brown (10YR 5/3) silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; friable; many fine roots; common faint dark yellowish brown (10YR 4/4) masses of iron accumulation; strongly acid; abrupt smooth boundary.

Bt1—8 to 16 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; common fine roots; common faint dark yellowish brown (10YR 4/6) clay films on faces of peds; strongly acid; clear wavy boundary.

Bt2—16 to 22 inches; yellowish brown (10YR 5/4) silt loam; moderate medium prismatic structure parting to moderate medium platy; firm; common fine roots; common distinct strong brown (7.5YR 4/4) clay films on faces of peds; common faint brown (10YR 5/3) clay depletions on faces of peds; few fine distinct very dark brown (10YR 2/2) iron-manganese stains; 2 percent rock fragments; very strongly acid; clear wavy boundary.

2Btx—22 to 40 inches; yellowish brown (10YR 5/6) silty clay loam; moderate very coarse prismatic structure parting to weak medium subangular blocky; very firm; few fine roots along faces of prisms; many distinct yellowish brown (10YR 5/4) clay films on faces of peds; common medium

prominent light brownish gray (10YR 6/2) iron depletions in the matrix; many distinct very pale brown (10YR 7/3) clay depletions on faces of prisms; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation; few fine prominent very dark brown (10YR 2/2) iron and manganese stains and concretions; 5 percent rock fragments, mostly glacial pebbles; brittle; very strongly acid; clear wavy boundary.

2BC—40 to 50 inches; yellowish brown (10YR 5/6) silty clay loam; moderate coarse prismatic structure parting to weak thin platy; firm; few gray (10YR 5/1) clay films in tubular pores in the upper part; common medium prominent light gray (10YR 7/1) iron depletions and distinct brownish yellow (10YR 6/8) masses of iron accumulation; common fine prominent very dark brown (10YR 2/2) iron and manganese concretions; 10 percent rock fragments, mostly glacial pebbles; very strongly acid; clear wavy boundary.

2C—50 to 80 inches; yellowish brown (10YR 5/4) loam; massive; firm; few medium prominent yellowish brown (10YR 5/8) masses of iron accumulation; 12 percent rock fragments, mostly glacial pebbles; slightly effervescent; neutral.

Range in Characteristics

Thickness of the solum: 48 to 120 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 48 to 120 inches
Depth to the fragipan: 22 to 36 inches
Thickness of the loess mantle: 18 to 40 inches
Content of rock fragments: Ap and Bt horizons—0 to 2 percent; 2Btx, 2BC, and 2C horizons—2 to 15 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—silt loam

Bt horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6
Texture—silt loam or silty clay loam

2Btx horizon:
Color—hue of 10YR or 7.5YR and value and chroma of 4 to 6
Texture—loam, clay loam, silt loam, or silty clay loam

2BC horizon:
Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 8
Texture—loam, clay loam, or silty clay loam

2C horizon:
Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6
Texture—loam or clay loam

Condit Series

Depth class: Very deep
Drainage class: Poorly drained
Parent material: Till
Landform: Flats and depressions on Wisconsinan till plains
Slope: 0 to 2 percent
Adjacent soils: Cardington, Centerburg, and Pewamo

Taxonomic classification: Fine, illitic, mesic Typic Epiaqualfs

Typical Pedon

Condit silt loam, about 3.5 miles south of Baltimore, in Greenfield Township, Fairfield County, Ohio; about 2,600 feet south and 2,100 feet east of the northwest corner of sec. 12, T. 15 N., R. 19 W.

Ap—0 to 9 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak fine granular structure; friable; many fine roots; 5 percent rock fragments; slightly acid; abrupt smooth boundary.

BEg—9 to 15 inches; gray (5Y 5/1) silty clay loam; moderate medium prismatic structure; firm; common fine roots; many faint gray (5Y 5/1) clay films on faces of peds; many faint light gray (2.5Y 5/2) clay depletions; common medium prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; 5 percent rock fragments; very strongly acid; clear wavy boundary.

Btg1—15 to 22 inches; gray (5Y 5/1) silty clay loam; moderate coarse prismatic structure parting to moderate medium angular blocky; firm; few fine roots; many faint gray (5Y 5/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium prominent black (10YR 2/1) masses of iron and manganese accumulation; 5 percent rock fragments; very strongly acid; clear wavy boundary.

Btg2—22 to 30 inches; gray (5Y 5/1) silty clay loam; moderate coarse prismatic structure parting to moderate medium angular blocky; firm; few fine roots; many faint gray (5Y 5/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium prominent black (10YR

2/1) masses of iron and manganese accumulation; 5 percent rock fragments; strongly acid; clear wavy boundary.

Bt—30 to 37 inches; yellowish brown (10YR 5/4) clay loam; moderate coarse prismatic structure; very firm; many distinct gray (5Y 5/1) clay films on vertical faces of peds; common medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 5 percent rock fragments; slightly acid; clear wavy boundary.

BC—37 to 44 inches; yellowish brown (10YR 5/4) clay loam; moderate coarse prismatic structure; very firm; many distinct gray (5Y 5/1) clay films on vertical faces of peds; common medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 5 percent rock fragments; neutral; clear wavy boundary.

C—44 to 80 inches; brown (10YR 4/3) clay loam; massive; very firm; common medium distinct gray (10YR 5/1) iron depletions and yellowish brown (10YR 5/6) masses of iron accumulation in matrix; 5 percent rock fragments; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 35 to 75 inches
Depth to the base of the argillic horizon: 35 to 75 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 35 to 75 inches
Content of rock fragments: Ap horizon—0 to 5 percent; Btg and Bt horizons—2 to 15 percent; C horizon—2 to 15 percent
Kind of rock fragments: Mostly shale and sandstone; some limestone pebbles and a few crystalline (igneous) pebbles

Ap horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 or 2
Texture—silt loam

Btg horizon:
Color—hue of 10YR to 5Y or N, value of 4 or 5, and chroma of 0 to 2 (chroma of 3 to 6 below a depth of 30 inches); the horizon has common or many high-chroma iron accumulations; coatings on faces of peds have hue of 10YR, 2.5Y, or 5Y, value of 3 to 5, and chroma of 1
Texture—silty clay loam or clay loam; subhorizons of silty clay

Bt horizon:
Color—hue of 10YR to 5Y or N, value of 4 or 5, and chroma of 0 to 6
Texture—silty clay loam or clay loam; subhorizons of silty clay

C horizon:
Color—hue of 5Y, 2.5Y, or 10YR, value of 4 or 5, and chroma of 1 to 6
Texture—clay loam, loam, or silt loam

Corwin Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Loess over till
Landform: Wisconsinan till plains
Position on the landform: Summits
Slope: 2 to 6 percent
Adjacent soils: Amanda, Cardington, Celina, Centerburg, and Miamian

Taxonomic classification: Fine-loamy, mixed, active, mesic Oxyaquic Argiudolls

Typical Pedon

Corwin silt loam, 2 to 6 percent slopes, about 2 miles northwest of Cedar Hill, in Amanda Township, Fairfield County, Ohio; 550 feet south and 450 feet east of the northwest corner of sec. 18, T. 13 N., R. 20 W.

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; firm; many fine roots; many faint very dark gray (10YR 3/1) organic coats on faces of peds; 2 percent rock fragments; moderately acid; abrupt smooth boundary.

AB—10 to 15 inches; very dark grayish brown (10YR 3/2) silty clay loam; moderate medium subangular blocky structure parting to moderate medium granular; friable; few fine roots; many faint very dark gray (10YR 3/1) organic coats on faces of peds; 2 percent rock fragments; moderately acid; clear smooth boundary.

Bt1—15 to 20 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common medium faint brown (10YR 5/3) iron depletions in the matrix; many medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common distinct very dark gray (10YR 3/1) organic coats on faces

of peds; 5 percent rock fragments; slightly acid; clear wavy boundary.

Bt2—20 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; firm; few fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium faint brown (10YR 5/3) iron depletions in the matrix; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 5 percent rock fragments; neutral; gradual wavy boundary.

BC—26 to 38 inches; yellowish brown (10YR 5/4) clay loam; moderate coarse prismatic structure; firm; many distinct gray (10YR 4/1) clay films on vertical faces of peds; many medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; common medium faint yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 5 percent rock fragments; neutral; clear wavy boundary.

Cd1—38 to 45 inches; yellowish brown (10YR 5/4) loam; massive; very firm; many medium distinct dark grayish brown (2.5Y 4/2) iron depletions in the matrix; many distinct light gray (10YR 7/2) streaks of secondary calcium carbonate; 10 percent rock fragments; strongly effervescent; slightly alkaline; abrupt wavy boundary.

Cd2—45 to 80 inches; brown (10YR 4/3) loam; massive; very firm; many medium distinct gray (10YR 5/1) iron depletions in the matrix; many medium faint yellowish brown (10YR 5/4) iron accumulations in the matrix; 5 percent rock fragments; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 24 to 40 inches
Thickness of the mollic epipedon: 10 to 16 inches
Depth to the base of the argillic horizon: 24 to 40 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 24 to 40 inches
Content of rock fragments: Ap horizon—0 to 2 percent; Bt horizon—0 to 10 percent; Cd horizon—2 to 10 percent

Ap horizon:
Color—hue of 10YR, value of 2 or 3, and chroma of 1 to 3
Texture—silt loam

Bt horizon:
Color—hue of 10YR, 7.5YR, or 2.5Y, value of 4 or 5, and chroma of 3 to 6
Texture—loam, clay loam, or silty clay loam

Cd horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 to 6
Texture—loam, clay loam, or silt loam

Crosby Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Till
Landform: Flats on Wisconsinan till plains
Position on the landform: Summits
Slope: 0 to 2 percent
Adjacent soils: Celina, Kokomo, and Miamian

Taxonomic classification: Fine, mixed, active, mesic Aeric Epiaqualfs

Typical Pedon

Crosby silt loam, 0 to 2 percent slopes, about 3 miles southwest of Pickerington, in Violet Township, Fairfield County, Ohio; about 100 feet north and 600 feet east of the southwest corner of sec. 17, T. 15 N., R. 20 W.

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; weak medium granular structure; friable; many fine roots; 5 percent rock fragments; strongly acid; abrupt smooth boundary.

2Bt1—8 to 18 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; common fine roots; many distinct gray (10YR 5/2) clay films on faces of peds; common medium distinct light brownish gray (10YR 6/1) iron depletions in the matrix; common medium faint yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many distinct dark grayish brown (10YR 4/2) organic coatings on faces of peds; 5 percent rock fragments; strongly acid; gradual wavy boundary.

2Bt2—18 to 27 inches; yellowish brown (10YR 5/4) clay; moderate coarse subangular blocky structure; firm; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common medium distinct gray (10YR 5/2) iron depletions in the matrix; common medium faint yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 5 percent rock fragments; strongly acid; clear wavy boundary.

2BC—27 to 38 inches; brown (10YR 4/3) silty clay loam; weak coarse subangular blocky structure; firm; common distinct dark gray (10YR 4/1) clay films on faces of peds; few medium distinct gray (10YR 5/2) iron depletions in the matrix; few

medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; 10 percent rock fragments; slightly effervescent in spots; slightly alkaline; clear wavy boundary.

2Cd1—38 to 52 inches; brown (10YR 4/3) loam; massive; very firm; common distinct gray (2.5Y 4/1) clay films on vertical faces of seams; few fine distinct light gray (10YR 7/1) secondary calcium carbonate streaks; 10 percent rock fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

2Cd2—52 to 80 inches; brown (10YR 4/3) loam; massive; very firm; 10 percent rock fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to the base of the argillic horizon: 20 to 40 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 20 to 40 inches
Content of rock fragments: Ap horizon—0 to 5 percent; 2Bt horizon—2 to 10 percent; 2Cd horizon—2 to 15 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

2Bt horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 6
Texture—silty clay loam or clay loam; subhorizons of silty clay or clay

2Cd horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 3 to 6
Texture—loam, clay loam, or silty clay loam

Cruze Series

Depth class: Deep
Drainage class: Moderately well drained
Parent material: Colluvium and residuum derived from shale and siltstone
Landform: Hills
Position on the landform: Shoulders, footslopes, and backslopes
Slope: 8 to 40 percent
Adjacent soils: Shelocta, Wellston, and Gilpin

Taxonomic classification: Fine, mixed, semiactive, mesic Aquic Hapludults

Typical Pedon

Cruze silt loam, in an area of Shelocta-Cruze complex, 15 to 25 percent slopes, about 10 miles southeast of Bremen, in Green Township, Hocking County, Ohio; about 700 feet south and 2,000 feet east of the northwest corner of sec. 36, T. 13 N., R. 16 W.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine and few coarse roots; 3 percent rock fragments, mostly sandstone; very strongly acid; clear smooth boundary.

Bt1—9 to 13 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium and fine subangular blocky structure; friable; common fine roots; few distinct yellowish brown (10YR 5/4) clay films on faces of peds; 3 percent rock fragments, mostly sandstone; very strongly acid; clear smooth boundary.

Bt2—13 to 17 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few medium and fine roots; many distinct yellowish brown (10YR 5/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 10 percent rock fragments, mostly sandstone; very strongly acid; gradual smooth boundary.

Bt3—17 to 24 inches; yellowish brown (10YR 5/6) silty clay; moderate medium subangular blocky structure; firm; few fine roots; many faint yellowish brown (10YR 5/4) clay films on faces of peds; common medium distinct light brownish gray (10YR 6/2) iron depletions and few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 10 percent rock fragments, mostly sandstone; very strongly acid; gradual smooth boundary.

Bt4—24 to 35 inches; 50 percent yellowish brown (10YR 5/4) and 50 percent light brownish gray (10YR 6/2) silty clay loam; moderate coarse subangular blocky structure parting to moderate fine subangular blocky; firm; few medium roots; many distinct yellowish brown (10YR 5/4) clay films on vertical faces of peds; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation that are relict features; 10 percent rock fragments, mostly sandstone; extremely acid; gradual smooth boundary.

Bt5—35 to 45 inches; 50 percent light brownish gray (10YR 6/2) and 50 percent brown (10YR 5/3) silty clay loam; moderate coarse prismatic structure

parting to moderate medium and fine subangular blocky; firm; very few fine roots; common distinct brown (10YR 5/3) clay films on faces of peds; common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation that are relict features; 12 percent rock fragments, mostly sandstone; extremely acid; gradual smooth boundary.

BC—45 to 53 inches; 50 percent light brownish gray (10YR 6/2) and 50 percent brown (10YR 5/3) silty clay; weak very coarse subangular blocky structure with platy rock structure visible in ped interiors; very few fine roots; many medium prominent strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation that are relict features; 10 percent rock fragments, mostly sandstone; extremely acid; abrupt wavy boundary.

Cr—53 to 80 inches; 60 percent light brownish gray (10YR 6/2) and 40 percent reddish yellow (7.5YR 6/8), stratified, weathered, soft clay-shale.

Range in Characteristics

Thickness of the solum: 36 to 60 inches
Depth to the base of the argillic horizon: 20 to 50 inches
Depth to bedrock: 48 to 80 inches
Content of rock fragments: Ap horizon—0 to 15 percent; Bt and C horizons—0 to 30 percent

Ap horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—silt loam

Bt horizon:
Color—hue of 7.5YR, 10YR, or 2.5Y, value of 4 to 6, and chroma of 2 to 6
Texture—silt loam, silty clay loam, or silty clay or the channery analogs of these textures

C or Cr horizon:
Color—hue of 7.5YR, 10YR, or 2.5Y, value of 4 to 6, and chroma of 2 to 8
Texture—silty clay loam, silty clay, or clay or the channery analogs of these textures

Eel Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Recent alluvium
Landform: Flood plains
Slope: 0 to 2 percent
Adjacent soils: Aetna, Beaucoup, Medway, and Shoals

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Fluvaquentic Eutrudepts

Typical Pedon

Eel silt loam, gravelly substratum, occasionally flooded, about 2.5 miles northeast of Amanda, in Hocking Township, Fairfield County, Ohio; about 1,625 feet north and 1,000 feet east of the southwest corner of sec. 19, T. 14 N., R. 19 W.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure parting to weak medium subangular blocky; friable; common fine and medium roots; many faint dark brown (10YR 3/3) organic coatings on faces of peds; 2 percent rock fragments, mostly pebbles; neutral; clear smooth boundary.

Bw1—8 to 15 inches; brown (10YR 4/3) silt loam; moderate medium subangular blocky structure; friable; few fine and medium roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common faint dark grayish brown (10YR 4/2) organic coatings on faces of peds; 2 percent rock fragments, mostly pebbles; slightly alkaline; clear wavy boundary.

Bw2—15 to 21 inches; brown (10YR 4/3) silt loam; moderate medium subangular blocky structure; friable; few fine and medium roots; few fine distinct yellowish brown (10YR 5/4 and 5/6) masses of iron accumulation in the matrix; few fine prominent very dark brown (7.5YR 3/2) masses of iron and manganese accumulation; common faint dark grayish brown (10YR 4/2) organic coatings on faces of peds; slightly alkaline; clear wavy boundary.

BCg—21 to 30 inches; dark grayish brown (2.5Y 4/2) silt loam and thin strata of very fine sandy loam; weak coarse subangular blocky structure; friable; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; few fine prominent very dark brown (7.5YR 3/2) masses of iron and manganese accumulation; slightly effervescent; slightly alkaline; abrupt wavy boundary.

Cg1—30 to 38 inches; dark gray (10YR 4/1) silt loam; weak coarse prismatic structure; friable; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation; few fine prominent strong brown (7.5YR 4/6) masses of iron and manganese accumulation; strongly effervescent; moderately alkaline; abrupt smooth boundary.

Cg2—38 to 55 inches; 60 percent dark gray (10YR 4/1), stratified silt loam and 40 percent dark brown (7.5YR 4/4) coarse sandy loam; massive; firm to

loose; common medium distinct strong brown (7.5YR 4/6) masses of iron and manganese accumulation; strongly effervescent; moderately alkaline; abrupt smooth boundary.

C—55 to 80 inches; dark yellowish brown (10YR 4/4), stratified very gravelly coarse sandy loam; single grained; loose; 45 percent rock fragments, mostly pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 24 to 40 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 20 to 40 inches
Content of rock fragments: Ap horizon—0 to 5 percent; Bw horizon—0 to 15 percent; Cg horizon—0 to 14 percent; C horizon—0 to 50 percent

Ap horizon:
Color—hue of 10YR, value of 2 to 4, and chroma of 2 or 3
Texture—silt loam

Bw horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 1 to 6
Texture—silt loam, loam, or clay loam; thin strata of silty clay loam or sandy loam

Cg horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 1 to 4
Texture—silt loam and stratified silt loam and coarse sandy loam

C horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 1 to 4
Texture—stratified very gravelly coarse sandy loam and coarse sandy loam

Eldean Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Outwash
Landform: Wisconsinan outwash terraces
Position on the landform: Treads and risers
Slope: 0 to 12 percent
Adjacent soils: Miamian, Ockley, Westland, and Gessie

Taxonomic classification: Fine, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Eldean silt loam, 2 to 6 percent slopes (fig. 22), about 7.5 miles west of Canal Winchester, in Hamilton Township, Franklin County, Ohio; about 2,070 feet north and 780 feet west of the southeast corner of sec. 24, T. 11 N., R. 22 W.

Figure 22.—Profile of an Eldean soil. Large cobbles are common in the soils of this series.

Ap—0 to 7 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; friable; common fine roots; 5 percent rock fragments; neutral; abrupt smooth boundary.

BA—7 to 10 inches; brown (7.5YR 4/4) clay loam; weak fine subangular blocky structure; friable; common medium roots; many faint brown (10YR 4/3) organic coatings on faces of peds; 8 percent rock fragments; slightly acid; abrupt wavy boundary.

Bt1—10 to 17 inches; reddish brown (5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; many faint brown (7.5YR 4/4) clay films on faces of peds; 12 percent rock fragments; slightly acid; clear wavy boundary.

Bt2—17 to 23 inches; reddish brown (5YR 4/4) clay

loam; moderate coarse subangular blocky structure; firm; few fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; 12 percent rock fragments; moderately acid; clear wavy boundary.

2Bt3—23 to 28 inches; brown (7.5YR 4/4) gravelly clay; firm; moderate coarse subangular blocky structure; firm; few fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; 25 percent rock fragments; moderately acid; gradual wavy boundary.

2BC—28 to 35 inches; dark brown (7.5YR 4/4) gravelly sandy clay loam; weak coarse subangular blocky structure; friable; few fine roots; common brown (10YR 4/3) clay films on pebbles and occurring as bridges between sand grains; common medium prominent light gray (10YR 7/2) calcium carbonate accumulation; 22 percent rock fragments; slightly effervescent; slightly alkaline; clear wavy boundary.

2C1—35 to 45 inches; brown (10YR 4/3), stratified gravelly sand; single grained; loose; 22 percent rock fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

2C2—45 to 80 inches; brown (10YR 5/3), stratified gravelly sand; single grained; loose; 22 percent rock fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to the base of the argillic horizon: 20 to 40 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 18 to 36 inches
Content of rock fragments: Ap horizon and the upper part of the Bt horizon—0 to 30 percent; lower part of the Bt horizon—10 to 60 percent; 2C horizon—0 to 70 percent

Ap horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—silt loam or gravelly loam

Bt and 2Bt horizons:
Color—hue of 5YR, 7.5YR, or 10YR and value and chroma of 3 to 6
Texture—clay or clay loam or the gravelly or very gravelly analogs of these textures

2C horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 2 to 4
Texture—stratified coarse sandy loam, loamy sand, or sand or the gravelly or very gravelly analogs of these textures

Euclid Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Silty glaciolacustrine sediments
Landform: Flats on lake plains or low stream terraces
Position on the landform: Summits or treads
Slope: 0 to 2 percent
Adjacent soils: Glenford and Patton

Taxonomic classification: Fine-silty, mixed, active, nonacid, mesic Aeric Endoaquepts

Typical Pedon

Euclid silt loam, rarely flooded, about 5 miles east of Lancaster, in Berne Township, Fairfield County, Ohio; about 420 feet south and 950 feet east of the northwest corner of sec. 12, T. 14 N., R. 18 W.

Ap1—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many fine roots; slightly acid; clear smooth boundary.

Ap2—7 to 15 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium platy structure parting to weak medium granular; friable; many fine roots; slightly acid; abrupt smooth boundary.

BE—15 to 20 inches; yellowish brown (10YR 5/4) silt loam; moderate medium platy structure parting to moderate fine subangular blocky; friable; many fine roots; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; many distinct pale brown (10YR 6/3) clay depletions on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common medium faint very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation on faces of peds; very strongly acid; clear smooth boundary.

Bw1—20 to 30 inches; brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; friable; common fine roots; common faint grayish brown (10YR 5/2) clay films on vertical faces of peds; common medium distinct gray (10YR 6/1) iron depletions in the matrix; many faint light brownish gray (2.5Y 6/2) clay depletions on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common medium faint very dark grayish brown (10YR 3/2) masses of iron and

manganese accumulation on faces of peds; very strongly acid; gradual wavy boundary.

Bw2—30 to 50 inches; mixed, 50 percent yellowish brown (10YR 5/6) and 50 percent light gray (10YR 6/1) silty clay loam; moderate medium prismatic structure parting to moderate coarse subangular blocky; friable; few fine roots; many distinct gray (10YR 6/1) clay films on vertical faces of peds; common medium prominent very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation on faces of peds; strongly acid; clear smooth boundary.

BC—50 to 60 inches; gray (10YR 5/1) silt loam; moderate coarse prismatic structure; weakly laminated in the matrix; friable; common coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; strongly acid; gradual wavy boundary.

C—60 to 80 inches; grayish brown (10YR 5/2) silt loam; massive; weakly laminated bedding planes; friable; common coarse faint gray (7.5YR 5/1) iron depletions in the matrix; common coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; moderately acid.

Range in Characteristics

Thickness of the solum: 30 to 60 inches
Depth to carbonates: More than 40 inches
Depth to bedrock: More than 80 inches
Content of rock fragments: 0 percent throughout

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6
Texture—silt loam or silty clay loam; thin subhorizons of loam

C horizon:
Color—hue of 2.5Y, 10YR, or 7.5YR, value of 4 to 6, and chroma of 1 to 6
Texture—stratified or laminated silt loam, silty clay loam, or loam; thin strata of fine sandy loam

Fitchville Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Silty glaciolacustrine sediments
Landform: Lake plains and stream terraces
Position on the landform: Summits or treads
Slope: 0 to 2 percent
Adjacent soils: Glenford and Patton

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon

Fitchville silt loam, 0 to 2 percent slopes, about 4 miles northeast of Rushville, in Richland Township, Fairfield County, Ohio; about 900 feet south and 2,000 feet west of the northeast corner of sec. 10, T. 17 N., R. 17 W.

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; weak coarse granular structure; friable; many fine roots; moderately acid; abrupt smooth boundary.

BE—10 to 14 inches; brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; firm; many fine roots; common medium distinct gray (10YR 5/1) iron depletions on faces of peds; common medium faint light olive brown (2.5Y 5/3) clay depletions on faces of peds; common medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; very strongly acid; clear wavy boundary.

Btg1—14 to 24 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium and coarse subangular blocky; firm; few fine roots; many dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few prominent black (10YR 2/1) masses of iron and manganese accumulation; strongly acid; gradual wavy boundary.

Btg2—24 to 32 inches; grayish brown (2.5Y 5/2) silty clay loam; weak coarse subangular blocky structure; firm; many faint gray (10YR 5/1) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few prominent black (10YR 2/1) masses of iron and manganese accumulation; moderately acid; clear wavy boundary.

Btg3—32 to 48 inches; gray (10YR 5/1) silty clay loam; weak coarse subangular blocky structure; firm; many dark grayish brown (10YR 4/2) clay films on faces of peds; common faint dark gray (7.5YR 4/1) iron depletions in the matrix; common prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few rock fragments; moderately acid; clear wavy boundary.

BC—48 to 63 inches; yellowish brown (10YR 5/4) silt loam, silty clay loam, and loam; weak coarse

prismatic structure; thin horizontal bedding planes; firm; common medium distinct gray (10YR 5/1) iron depletions in the matrix; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; gradual wavy boundary.

C—63 to 80 inches; brown (10YR 4/3) silty clay loam; massive; firm; common medium distinct gray (10YR 5/1) iron depletions in the matrix; common medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; neutral; slightly effervescent below a depth of 70 inches.

Range in Characteristics

Thickness of the solum: 30 to 70 inches
Depth to the base of the argillic horizon: 30 to 60 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 60 to 80 inches
Content of rock fragments: Ap, BE, Btg, and C horizons—0 to 5 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

BE horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 6
Texture—silt loam or silty clay loam

Btg horizon:
Color—hue of 10YR, 2.5Y, or 7.5YR, value of 4 to 6, and chroma of 1 to 8
Texture—silt loam or silty clay loam; thin strata of loam, clay loam, or fine sandy loam

C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—silt loam or silty clay loam; thin strata of silty clay, loam, and fine sandy loam

Fox Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Loamy sediments over stratified sand and gravel
Landform: Wisconsinan outwash terraces, eskers, and kames
Position on the landform: Treads and dissected risers
Slope: 0 to 20 percent
Adjacent soils: Negley, Sleeth, and Westland

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Fox silt loam, 0 to 2 percent slopes (fig. 23), about 5 miles southeast of Lancaster, in Berne Township, Fairfield County, Ohio; about 2,600 feet south and 1,000 feet west of the northeast corner of sec. 28, T. 14 N., R. 18 W.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; friable; many medium and fine roots; 10 percent rock fragments, mostly gravel; moderately acid; abrupt smooth boundary.

Bt1—9 to 15 inches; dark brown (7.5YR 4/4) gravelly loam; weak medium subangular blocky structure; friable; many medium and fine roots; common faint brown (10YR 4/3) clay films on faces of peds; common distinct very dark grayish brown (10YR 3/2) organic coatings; 20 percent rock fragments, mostly gravel; moderately acid; clear smooth boundary.

Bt2—15 to 20 inches; dark yellowish brown (10YR 4/4) gravelly clay loam; moderate medium subangular blocky structure; friable; many fine roots; common faint dark brown (10YR 3/3) clay films on faces of peds; 15 percent rock fragments, mostly gravel; moderately acid; clear wavy boundary.

2Bt3—20 to 32 inches; dark yellowish brown (10YR 4/4) gravelly sandy clay loam; weak medium subangular blocky structure; very friable; common fine roots; common faint dark brown (7.5YR 4/4) clay films on faces of peds; 25 percent rock fragments, mostly gravel; moderately acid; abrupt wavy boundary.

2Bt4—32 to 34 inches; dark yellowish brown (10YR 3/4) gravelly coarse sandy loam; weak medium subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 4/2) clay films on faces of peds; 30 percent rock fragments, mostly gravel; slightly effervescent; slightly alkaline; abrupt irregular boundary.

2C1—34 to 60 inches; brown (10YR 5/3), stratified gravelly loamy coarse sand; loose; 30 percent rock fragments, mostly gravel but some shale; strongly effervescent; moderately alkaline; clear smooth boundary.

2C2—60 to 80 inches; brown (10YR 5/3), stratified gravelly coarse sand; loose; 30 percent rock fragments, mostly gravel but some shale; strongly effervescent; moderately alkaline.

Figure 23.—This profile of a Fox soil is in Hancock County, Ohio.

Range in Characteristics

Thickness of the solum: 24 to 40 inches
Depth to bedrock: More than 80 inches
Depth to the base of the argillic horizon: 20 to 40 inches
Depth to carbonates: 24 to 40 inches
Thickness of the loess: 0 to 24 inches
Content of rock fragments: Ap and Bt horizons—0 to 25 percent; 2Bt horizon—0 to 30 percent; 2C horizon—0 to 60 percent
Kind of rock fragments: Mostly gravel; some shale fragments in the 2C horizon

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam or loam

Bt horizon:
Color—hue of 10YR, 7.5YR, or 5YR, value of 3 or 4, and chroma of 3 to 5
Texture—silt loam, loam, clay loam, or silty clay loam or the gravelly analogs of these textures

2Bt horizon:
Color—hue of 10YR, 7.5YR, or 5YR, value of 3 to 5, and chroma of 3 or 4
Texture—sandy loam, sandy clay loam, gravelly sandy loam, or gravelly sandy clay loam

2C horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 4
Texture—stratified sand, coarse sand, and rock fragments, mostly gravel; the range includes loamy coarse sand or loamy sand in the upper part in most pedons

Gallman Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Stratified outwash over till
Landform: Wisconsinan outwash terraces
Position on the landform: Summits
Slope: 2 to 6 percent
Adjacent soils: Westland and Fox

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Gallman silt loam, loamy substratum, 2 to 6 percent slopes, about 3 miles south of Carroll, in Greenfield Township, Fairfield County, Ohio; about 300 feet south and 2,400 feet east of the northwest corner of sec. 30, T. 15 N., R. 19 W.

Ap1—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many medium and fine roots; moderately acid; abrupt smooth boundary.
Ap2—8 to 13 inches; brown (10YR 4/3) silt loam; weak medium platy structure; friable; common fine roots; moderately acid; abrupt smooth boundary.
Bt1—13 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common fine roots; common faint brown (10YR 4/3) clay films on faces of peds; 5 percent rock fragments, mostly gravel; strongly acid; clear wavy boundary.
Bt2—21 to 27 inches; brown (7.5YR 4/4) clay loam;

moderate coarse subangular blocky structure; firm; few fine roots; common faint dark brown (10YR 4/3) clay films on faces of peds; 10 percent rock fragments, mostly gravel; strongly acid; abrupt wavy boundary.

Bt3—27 to 40 inches; dark brown (7.5YR 4/4) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; 10 percent rock fragments, mostly gravel; strongly acid; clear wavy boundary.

Bt4—40 to 44 inches; brown (10YR 4/3) sandy loam; moderate fine subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds and clay bridges between grains of sand and gravel; 5 percent rock fragments, mostly gravel; moderately acid; gradual wavy boundary.

BC—44 to 71 inches; brown (10YR 4/3), stratified gravelly sandy clay loam, sandy loam, and clay loam; massive; firm; common distinct brown (7.5YR 4/4) clay bridges between grains of sand and gravel; 25 percent rock fragments in gravelly zones and less than 15 percent rock fragments in other zones; neutral; abrupt wavy boundary.

2C—71 to 80 inches; yellowish brown (10YR 5/4) loam; massive; firm; 5 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 55 to 120 inches
Depth to the base of the argillic horizon: 55 to 120 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 55 to 120 inches
Content of rock fragments: Ap horizon—0 to 10 percent; Bt horizon—0 to 35 percent; 2C horizon—5 to 14 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

Bt horizon:
Color—hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 to 4
Texture—silt loam, silty clay loam, loam, sandy clay loam, clay loam, or sandy loam or the gravelly analogs of these textures

BC horizon:
Color—hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 to 4
Texture—stratified sandy loam, loam, clay loam, sandy clay loam, or loamy sand or the gravelly or very gravelly analogs of these textures

2C horizon:
Color—hue of 10YR, 7.5YR, or 2.5Y, value of 4 to 6, and chroma of 2 to 4
Texture—loam, silt loam, or clay loam

Germano Series

Depth class: Moderately deep
Drainage class: Well drained
Parent material: Residuum derived from sandstone
Landform: Hills
Position on the landform: Footslopes and backslopes
Slope: 15 to 70 percent
Adjacent soils: Berks, Cedarfalls, Gilpin, Hickory, and Shelocta

Taxonomic classification: Coarse-loamy, mixed, active, mesic Typic Hapludults

Typical Pedon

Germano sandy loam, 25 to 40 percent slopes, about 4.5 miles southwest of Sugar Grove, in Madison Township, Fairfield County, Ohio; about 1,200 feet south and 2,450 feet east of the northwest corner of sec. 13, T. 13 N., R. 19 W.

A—0 to 2 inches; very dark grayish brown (10YR 3/2) sandy loam, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; many fine and medium roots; 10 percent sandstone rock fragments; very strongly acid; clear smooth boundary.

E—2 to 6 inches; brown (10YR 5/3) sandy loam; weak thin platy structure; very friable; common medium roots; 10 percent sandstone rock fragments; very strongly acid; clear smooth boundary.

BE—6 to 12 inches; brownish yellow (10YR 6/6) sandy loam; weak medium platy structure; very friable; common fine and medium roots; 10 percent sandstone rock fragments; strongly acid; gradual wavy boundary.

Bw—12 to 20 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; 10 percent sandstone rock fragments; strongly acid; clear wavy boundary.

Bt—20 to 30 inches; strong brown (7.5YR 5/6) channery sandy loam; moderate medium subangular blocky structure; friable; common fine and medium roots; few faint brown (7.5YR 4/4)

clay films on faces of peds and rock fragments; 15 percent sandstone rock fragments; strongly acid; clear irregular boundary.

BC—30 to 38 inches; strong brown (7.5YR 5/6) channery sandy loam; weak coarse subangular blocky structure; very friable; common fine and medium roots; 35 percent sandstone rock fragments; strongly acid; clear wavy boundary.

Cr—38 to 41 inches; strong brown (7.5YR 5/8), fractured, weathered sandstone.

R—41 to 48 inches; fractured sandstone.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments: A and E horizons—2 to 20 percent; Bw or Bt horizon—5 to 35 percent; BC and C horizons—20 to 80 percent

A horizon:
Color—hue of 10YR, value of 2 or 3, and chroma of 1 or 2
Texture—sandy loam or channery sandy loam

Ap horizon:
Color—hue of 10YR, value of 4, and chroma of 3 or 4
Texture—sandy loam or channery sandy loam

E horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 3 or 4
Texture—fine sandy loam, sandy loam, channery fine sandy loam, or channery sandy loam

Bw and Bt horizons:
Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 4 to 8
Texture—fine sandy loam, sandy loam, coarse sandy loam, or loam or the channery analogs of these textures

BC and C horizons:
Color—hue of 5YR, 7.5YR, or 10YR, value of 4 to 6, and chroma of 3 to 6
Texture—the channery to extremely channery analogs of fine sandy loam, sandy loam, or loamy sand

Gessie Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Recent calcareous alluvium
Landform: Flood plains
Slope: 0 to 2 percent
Adjacent soils: Aetna, Shoals, and Beaucoup

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Fluventic Eutrudepts

Typical Pedon

Gessie silt loam, occasionally flooded, about 5.5 miles southeast of Lancaster, in Berne Township, Fairfield County, Ohio; about 800 feet south and 1,800 feet west of the northeast corner of sec. 33, T. 14 N., R. 18 W.

Ap—0 to 10 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium granular structure; friable; common fine roots; strongly effervescent; slightly alkaline; abrupt smooth boundary.

Bw—10 to 42 inches; brown (10YR 4/3) silt loam with thin strata of fine sandy loam and loam; moderate coarse granular structure; friable; few fine roots; strongly effervescent; slightly alkaline; clear smooth boundary.

C1—42 to 64 inches; brown (10YR 5/3), stratified loam and sandy loam; weak coarse granular structure; friable; few fine roots; thin band of silt loam at the lower boundary; strongly effervescent; moderately alkaline; clear smooth boundary.

C2—64 to 80 inches; brown (10YR 5/3), stratified loamy sand and sandy loam; massive; weak medium laminations; very friable; common fine and medium roots; strongly effervescent; moderately alkaline; 10 percent pebbles.

Range in Characteristics

Depth to bedrock: More than 80 inches
Carbonates: At the surface
Content of rock fragments: Ap and Bw horizons—0 to 5 percent; C horizon below a depth of 40 inches—0 to 10 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

Bw horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4
Texture—silt loam or loam containing thin strata of fine sandy loam or loam

C horizon:
Color—hue of 10YR, value of 5, and chroma of 3 or 4

Texture—stratified silt loam, loam, or sandy loam; thin strata of loamy sand or sand

Gilpin Series

Depth class: Moderately deep
Drainage class: Well drained
Parent material: Residuum derived from sandstone and siltstone
Landform: Hills
Position on the landform: Summits, shoulders, backslopes, and footslopes
Slope: 6 to 35 percent
Adjacent soils: Berks, Germano, Hickory, Wellston, Shelocta, and Zanesville

Taxonomic classification: Fine-loamy, mixed, semiactive, mesic Typic Hapludults

Typical Pedon

Gilpin silt loam, 6 to 15 percent slopes, about 4 miles west of Sugar Grove, in Madison Township, Fairfield County, Ohio; about 2,200 feet south and 600 feet west of the northeast corner of sec. 12, T. 13 N., R. 19 W.

A1—0 to 2 inches; brown (10YR 5/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; many fine, medium, and coarse roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; very strongly acid; clear smooth boundary.
A2—2 to 8 inches; brown (10YR 5/3) silt loam; weak medium platy structure parting to moderate medium granular; friable; many fine and common coarse roots; very strongly acid; clear smooth boundary.
Bt1—8 to 12 inches; brown (7.5YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; many faint dark brown (7.5YR 4/4) clay films on faces of peds; 5 percent rock fragments; strongly acid; clear smooth boundary.
2Bt2—12 to 20 inches; brown (7.5YR 5/4) channery clay loam; moderate medium subangular blocky structure; firm; few fine and medium roots; many faint dark brown (7.5YR 4/4) clay films on faces of peds; 15 percent rock fragments; strongly acid; gradual wavy boundary.
2Bt3—20 to 30 inches; brown (7.5YR 5/4) channery clay loam; moderate coarse subangular blocky structure; firm; few fine roots; few distinct dark brown (7.5YR 4/4) clay films on faces of peds; 20 percent rock fragments; strongly acid; clear wavy boundary.
2C—30 to 36 inches; brown (7.5YR 5/4) very channery loam; massive; very firm; few faint dark brown (7.5YR 4/4) clay films on rock fragments; 40 percent rock fragments; strongly acid; abrupt wavy boundary.
2R—36 to 39 inches; sandstone bedrock.

Range in Characteristics

Thickness of the solum: 18 to 36 inches
Depth to the base of the argillic horizon: 18 to 36 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments: A horizon—0 to 14 percent; Bt and 2Bt horizons—5 to 40 percent; C or 2C horizon—30 to 90 percent

A horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—silt loam

Bt or 2Bt horizon:
Color—hue of 7.5YR, 10YR, or 2.5Y, value of 4 to 6, and chroma of 4 to 8
Texture—silt loam, loam, clay loam, or silty clay loam or the channery or very channery analogs of these textures

C or 2C horizon:
Color—hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 6
Texture—silt loam, loam, or silty clay loam or the channery to extremely channery analogs of these textures

Glenford Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Silty glaciolacustrine sediments
Landform: Lake plains and stream terraces
Position on the landform: Treads, dissected risers, summits, and backslopes
Slope: 2 to 15 percent
Adjacent soils: Euclid, Fitchville, and Patton

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon

Glenford silt loam, 2 to 6 percent slopes, about 2.5 miles north of Rushville, in Richland Township, Fairfield County, Ohio; about 1,400 feet south and 2,000 feet west of the northeast corner of sec. 16, T. 17 N., R. 17 W.

Ap—0 to 10 inches; brown (10YR 4/3) silt loam;

moderate medium granular structure; friable; many fine roots; many faint dark grayish brown (10YR 4/2) organic coatings on faces of peds; moderately acid; abrupt smooth boundary.

BA—10 to 15 inches; yellowish brown (10YR 5/4) silt loam; moderate fine subangular blocky structure; friable; common fine roots; many distinct brown (10YR 4/3) clay depletions on faces of peds; strongly acid; clear wavy boundary.

Bt1—15 to 20 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; firm; few fine roots; common faint dark yellowish brown (10YR 4/4) clay films in voids and distinct brown (10YR 4/3) clay depletions on faces of peds; strongly acid; clear wavy boundary.

Bt2—20 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine distinct grayish brown (10YR 5/2) iron depletions; few medium distinct very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; strongly acid; clear wavy boundary.

Bt3—30 to 40 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure; friable; few fine roots; common faint brown (10YR 5/3) clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2 and 10YR 5/2) iron depletions in the matrix; few medium distinct very dark grayish brown (10YR 3/2) masses of iron and manganese concretions; moderately acid; clear wavy boundary.

BC—40 to 67 inches; yellowish brown (10YR 5/4) silt loam; moderate coarse prismatic structure with laminations on interiors of peds; friable; few roots; common faint grayish brown (10YR 5/2) clay films on faces of peds; many medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; many medium faint yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many medium distinct very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; moderately acid; clear wavy boundary.

C—67 to 80 inches; yellowish brown (10YR 5/4), stratified silt loam, loam, sandy loam, and silty clay loam; massive; friable; many medium distinct gray (10YR 5/1) iron depletions in the matrix; many medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; moderately acid.

Range in Characteristics

Thickness of the solum: 30 to 60 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 40 to 80 inches

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

Bt horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6
Texture—silt loam or silty clay loam; thin lenses of fine sandy loam or loam

BC horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6
Texture—silt loam or silty clay loam; strata of fine sandy loam

C horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6
Texture—stratified silt loam or silty clay loam; thin strata of loam, fine sandy loam, silty clay, or sandy loam

Hickory Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Till
Landform: Illinoian till plains
Position on the landform: Shoulders, footslopes, and backslopes
Slope: 6 to 35 percent
Adjacent soils: Cincinnati, Jeneva, Germano, and Gilpin

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Hickory loam, in an area of Hickory-Germano complex, 20 to 35 percent slopes, about 0.8 mile northeast of Clearport, in Madison Township, Fairfield County, Ohio; about 1,500 feet east and 1,500 feet north of the southwest corner of sec. 3, T. 14 N., R. 19 W.

Ap—0 to 6 inches; brown (10YR 4/3) loam; moderate medium granular structure; friable; many fine and medium roots; 5 percent rock fragments; moderately acid; clear smooth boundary.

BA—6 to 13 inches; dark yellowish brown (10YR 4/4) loam; weak medium granular structure parting to weak medium subangular blocky; friable; common

fine and medium roots; few faint brown (10YR 4/3) clay films on faces of peds; 5 percent rock fragments; strongly acid; gradual wavy boundary.

Bt1—13 to 20 inches; strong brown (7.5YR 4/6) gravelly loam; weak medium subangular blocky structure; firm; few fine and medium roots; common faint brown (7.5YR 4/4) clay films on faces of peds; 15 percent rock fragments; strongly acid; gradual wavy boundary.

Bt2—20 to 25 inches; strong brown (7.5YR 4/6) gravelly clay loam; weak medium subangular blocky structure; firm; few fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; 15 percent rock fragments; strongly acid; gradual wavy boundary.

Bt3—25 to 30 inches; strong brown (7.5YR 4/6) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; 10 percent rock fragments; moderately acid; gradual wavy boundary.

Bt4—30 to 37 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate medium subangular blocky structure; very firm; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; 5 percent rock fragments; moderately acid; gradual wavy boundary.

BC—37 to 50 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse subangular blocky structure; very firm; common faint brown (10YR 5/3) clay films on faces of peds; 5 percent rock fragments; slightly acid; abrupt wavy boundary.

C1—50 to 57 inches; brown (10YR 5/3) silty clay loam; massive; very firm; 10 percent rock fragments; slightly effervescent; moderately alkaline; gradual wavy boundary.

C2—57 to 80 inches; light olive brown (2.5Y 5/4) gravelly loam; massive; very firm; 35 percent rock fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 40 to 72 inches

Depth to the base of the argillic horizon: More than 40 inches

Depth to bedrock: More than 5 feet

Depth to carbonates: 40 to 72 inches

Content of rock fragments: Ap horizon—0 to 5 percent; Bt horizon—0 to 20 percent; C horizon—typically 2 to 20 percent (2 to 35 percent in some subhorizons)

Ap horizon:

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4

Texture—silt loam or loam

Bt horizon:

Color—hue of 7.5YR, 10YR, or 2.5Y, value of 4 to 6, and chroma of 3 to 6

Texture—clay loam, silty clay loam, or loam or the gravelly analogs of these textures

C horizon:

Color—hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 to 6

Texture—loam, clay loam, or sandy loam or the gravelly analogs of these textures

Homewood Series

Depth class: Very deep

Drainage class: Moderately well drained

Parent material: Loess over till

Landform: Illinoian till plains

Position on the landform: Summits, shoulders, footslopes, and backslopes

Slope: 6 to 35 percent

Adjacent soils: Cincinnati, Gilpin, Jeneva, and Shelocta

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Oxyaquic Fragiudalfs

Typical Pedon

Homewood silt loam, in an area of Homewood-Gilpin complex, 12 to 20 percent slopes, eroded, about 2.3 miles southeast of Colfax, in Rush Creek Township, Fairfield County, Ohio; about 550 feet west and 2,300 feet north of the southeast corner of sec. 7, T. 16 N., R. 17 W.

Ap1—0 to 4 inches; dark brown (10YR 3/3) silt loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to moderate medium and coarse granular; friable; many fine and medium roots; 3 percent rock fragments; strongly acid; clear wavy boundary.

Ap2—4 to 9 inches; brown (10YR 5/3) silt loam; moderate fine and medium subangular blocky structure; friable; common fine and medium roots; few distinct light yellowish brown (10YR 6/4) clay depletions on faces of peds; 4 percent rock fragments; strongly acid; clear wavy boundary.

BE—9 to 13 inches; yellowish brown (10YR 5/6) silt

loam; moderate fine and medium subangular blocky structure; friable; common fine and coarse roots; common distinct dark yellowish brown (10YR 4/6) clay films on faces of peds; few distinct light yellowish brown (10YR 6/4) clay depletions on faces of peds; 3 percent rock fragments, mostly sandstone, few erratics; very strongly acid; gradual wavy boundary.

2Bt1—13 to 16 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine and medium roots; common distinct dark yellowish brown (10YR 4/6) clay films on faces of peds; few distinct light yellowish brown (10YR 6/4) clay depletions on faces of peds; few fine and medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; few fine and medium distinct black (10YR 2/1) masses of manganese accumulation; 5 percent rock fragments, mostly sandstone, few erratics; strongly acid; gradual wavy boundary.

2Bt2—16 to 22 inches; yellowish brown (10YR 5/6) clay loam; moderate fine and medium subangular blocky structure; firm; common fine and medium roots; common distinct yellowish brown (10YR 5/4) and few distinct strong brown (7.5YR 4/6) clay films on faces of peds; few fine faint strong brown (7.5YR 5/6) masses of iron accumulation; 10 percent rock fragments; very strongly acid; gradual wavy boundary.

2Bt3—22 to 28 inches; yellowish brown (10YR 5/4) clay loam; weak medium prismatic structure parting to moderate medium and coarse subangular blocky; very firm; common fine and medium roots; common distinct dark yellowish brown (10YR 4/6) and few distinct strong brown (7.5YR 4/6) clay films on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; 14 percent rock fragments, mostly sandstone, few erratics; very strongly acid; gradual wavy boundary.

2Btx1—28 to 36 inches; yellowish brown (10YR 5/4) channery clay loam; moderate medium platy structure parting to moderate medium angular blocky; very firm; few fine roots along vertical prism faces; common distinct dark yellowish brown (10YR 4/4) and brown (10YR 5/3) clay films on faces of peds; common medium distinct light brownish gray (2.5Y 6/2) iron depletions; few medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; many medium and coarse distinct black (10YR 2/1) masses of manganese accumulation on faces of peds; 20 percent rock fragments, mostly siltstone and sandstone, few erratics; brittle; very strongly acid; clear smooth boundary.

2Btx2—36 to 42 inches; yellowish brown (10YR 5/6) channery clay loam; weak very coarse prismatic structure parting to moderate very thick platy; very firm; few fine roots along faces of prisms; many distinct dark yellowish brown (10YR 4/4) and brown (10YR 5/3) clay films on faces of peds; common medium prominent light brownish gray (2.5Y 6/2) iron depletions; few medium faint strong brown (7.5YR 5/6) masses of iron accumulation; many medium and coarse prominent black (10YR 2/1) masses of manganese accumulation on faces of peds; 20 percent rock fragments, mostly siltstone and sandstone, few erratics; brittle; strongly acid; clear smooth boundary.

2BC1—42 to 60 inches; yellowish brown (10YR 5/6) channery clay loam; weak medium and coarse subangular blocky structure; very firm; few faint yellowish brown (10YR 5/4) clay films on faces of peds; common fine prominent light brownish gray (2.5Y 6/2) iron depletions; few fine distinct strong brown (7.5YR 5/8) masses of iron accumulation; few fine prominent very dark brown (10YR 2/2) masses of manganese accumulation on faces of peds; 25 percent rock fragments; moderately acid; gradual wavy boundary.

2BC2—60 to 70 inches; yellowish brown (10YR 5/4) channery clay loam; weak medium and coarse subangular blocky structure; very firm; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (2.5Y 6/2) iron depletions; common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation; common medium distinct black (10YR 2/1) masses of manganese accumulation on faces of peds; 20 to 25 percent rock fragments; moderately acid; gradual wavy boundary.

2BC3—70 to 80 inches; brown (10YR 5/3) channery clay loam; weak medium coarse subangular blocky structure; very firm; common medium distinct light gray (10YR 7/1) iron depletions; few fine prominent brownish yellow (10YR 6/8) masses of iron accumulation; common medium distinct black (10YR 2/1) masses of manganese accumulation on faces of peds; 30 percent rock fragments; moderately acid.

Range in Characteristics

Thickness of the solum: 60 to 90 inches
Thickness of the loess mantle: Less than 16 inches
Depth to bedrock: More than 80 inches
Depth to the fragipan: 16 to 33 inches

Depth to carbonates: More than 60 inches
Content of rock fragments: Ap horizon—0 to 5 percent; 2Bt horizon—0 to 15 percent; 2Btx and 2BC horizons—5 to 30 percent; 2C horizon—5 to 35 percent

Ap horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—silt loam

2Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6
Texture—clay loam, silty clay loam, loam, or silt loam

2Btx or 2BC horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—clay loam, silty clay loam, loam, or silt loam or the channery analogs of these textures

2C horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6
Texture—loam, clay loam, channery loam, or channery clay loam

Jeneva Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Loess over pedisediment and till
Landform: Illinoian till plains
Position on the landform: Summits
Slope: 2 to 6 percent
Adjacent soils: Cincinnati, Homewood, and Wellston

Taxonomic classification: Fine-silty, mixed, active, mesic Oxyaquic Hapludalfs

Typical Pedon

Jeneva silt loam, 2 to 6 percent slopes, about 2.5 miles east of Bremen, in Rush Creek Township, Fairfield County, Ohio; 650 feet south and 1,800 feet east of the northwest corner of sec. 24, T. 16 N., R. 17 W.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak coarse granular structure; friable; common medium and many fine roots; moderately acid; abrupt smooth boundary.

Bt1—8 to 16 inches; yellowish brown (10YR 5/6) silty clay loam; weak medium subangular blocky structure; friable; common fine and medium roots; many brown (7.5YR 5/4) clay films on faces of peds; few dark grayish brown (10YR 4/2) and brown (10YR 4/3) wormcasts; moderately acid; gradual smooth boundary.

Bt2—16 to 23 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common medium and fine roots; many brown (7.5YR 5/4) clay films on faces of peds; few fine prominent black (10YR 2/1) masses of iron and manganese accumulation; moderately acid; clear smooth boundary.

Bt3—23 to 29 inches; yellowish brown (10YR 5/6) silt loam; weak coarse and medium subangular blocky structure; friable; common fine and medium roots; common faint brown (7.5YR 5/4) and brown (10YR 5/3) clay films on faces of peds; few fine prominent grayish brown (10YR 5/2) iron depletions in the matrix; few fine faint strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium prominent black (10YR 2/1) masses of iron and manganese accumulation; moderately acid; gradual smooth boundary.

Bt4—29 to 36 inches; yellowish brown (10YR 5/6) silt loam; weak coarse and medium subangular blocky structure; friable; common fine roots; common brown (7.5YR 5/4) clay films on faces of peds; few fine prominent grayish brown (10YR 5/2) iron depletions in the matrix; common distinct brown (10YR 5/3) clay depletions on faces of peds; few medium prominent black (10YR 2/1) masses of iron and manganese accumulation; strongly acid; gradual smooth boundary.

Bt5—36 to 54 inches; yellowish brown (10YR 5/6) silt loam; weak coarse and medium subangular blocky structure; friable; common brown (7.5YR 5/4) clay films on faces of peds; common fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; common distinct brown (10YR 5/3) clay depletions on faces of peds; few fine distinct yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 1 percent pebbles; strongly acid; clear smooth boundary.

2Bt6—54 to 63 inches; yellowish brown (10YR 5/6) silt loam; moderate fine and medium subangular blocky structure; friable; common brown (7.5YR 5/4) clay films on faces of peds; common medium prominent light gray (10YR 7/2) iron depletions in the matrix; stone line at the lower boundary; 5 percent pebbles; moderately acid; clear smooth boundary.

3E1—63 to 69 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; firm; few yellowish brown (10YR 5/6) clay films on faces of peds; few fine distinct light brownish gray

(10YR 6/2) iron depletions in the matrix; few fine faint light yellowish brown (10YR 6/4) masses of iron accumulation in the matrix; stone line at the upper boundary; 10 percent pebbles; moderately acid; clear smooth boundary.

3E2—69 to 75 inches; brownish yellow (10YR 6/6) silt loam; moderate medium and thick platy structure; firm; few faint yellowish brown (10YR 5/6) clay films on faces of peds; 5 percent pebbles; moderately acid; clear smooth boundary.

3BE—75 to 82 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky and moderate medium platy structure; friable; few distinct brown (7.5YR 4/2) clay films on faces of peds; common distinct light yellowish brown (10YR 6/4) clay depletions on faces of peds; 5 percent pebbles; moderately acid; gradual smooth boundary.

3Bt—82 to 93 inches; brownish yellow (10YR 6/6) silty clay loam; moderate fine subangular blocky structure; friable; common distinct yellowish brown (10YR 5/6) clay films on faces of peds; few prominent light brownish gray (2.5Y 6/2) iron depletions; common faint yellowish brown (10YR 5/6) and distinct strong brown (7.5YR 5/8) masses of iron accumulation; moderately acid; clear wavy boundary.

4Cr—93 to 115 inches; brownish yellow (10YR 6/6), weakly cemented sandstone and shale.

Range in Characteristics

Thickness of the solum: 60 to 100 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: More than 60 inches
Thickness of the loess mantle: 40 to 60 inches
Content of rock fragments: Ap and Bt horizons—0 to 1 percent; 2Bt horizon—0 to 10 percent; 3E, 3BE, and 3Bt horizons—0 to 10 percent

Ap horizon:
Color—hue of 10YR, value of 4, and chroma of 2 or 3
Texture—silt loam

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—silt loam or silty clay loam

2Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—silt loam, silty clay loam, or loam

3E, 3BE, and 3Bt horizons:
Color—hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 3 to 6
Texture—silt loam or silty clay loam

Kokomo Series

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Till
Landform: Flats and depressions on Wisconsinan till plains
Slope: 0 to 2 percent
Adjacent soils: Celina, Crosby, and Miamian

Taxonomic classification: Fine, mixed, superactive, mesic Typic Argiaquolls

Typical Pedon

Kokomo silty clay loam (fig. 24), about 1.5 miles northeast of Stoutsville, in Clear Creek Township, Fairfield County, Ohio; about 1,900 feet north and 800 feet east of the southwest corner of sec. 8, T. 12 N., R. 20 W.

Ap—0 to 11 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; firm; many medium and fine roots; black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear wavy boundary.

BA—11 to 14 inches; very dark grayish brown (10YR 3/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common medium and fine roots; few medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; many medium distinct black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear wavy boundary.

Btg—14 to 27 inches; gray (5Y 5/1) silty clay loam; moderate medium prismatic structure parting to moderate coarse angular blocky; firm; common medium and fine roots; common distinct very dark gray (10YR 3/1) organo-clay films on vertical faces of peds and common distinct grayish brown (10YR 5/2) clay films on vertical faces of peds; common medium prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; neutral; clear wavy boundary.

Bt—27 to 42 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse prismatic structure;

Figure 24.—Profile of a Kokomo soil. The surface layer is dark because of the content of organic matter. The gray colors in the subsoil are a result of the reduction of iron.

firm; common fine roots; common distinct very dark gray (10YR 3/1) organo-clay films on vertical faces of peds and common distinct grayish brown (10YR 5/2) clay films on vertical faces of peds; many coarse prominent gray (5Y 5/1) iron depletions in the matrix; 5 percent rock fragments; neutral; gradual wavy boundary.

BC—42 to 50 inches; yellowish brown (10YR 5/4) clay loam; weak coarse prismatic structure; firm; few fine roots; common coarse distinct gray (5Y 5/1) iron depletions in the matrix; 5 percent rock fragments; neutral; clear wavy boundary.

C1—50 to 70 inches; brown (10YR 4/3) loam; massive; friable; common medium distinct gray (10YR 5/1) iron depletions and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 5 percent rock fragments; strongly effervescent; slightly alkaline; clear wavy boundary.

C2—70 to 80 inches; brown (10YR 4/3) loam; massive; very firm; common medium distinct gray (10YR 5/1) iron depletions in the matrix; 10 percent rock fragments; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 36 to 60 inches
Thickness of the mollic epipedon: 10 to 24 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 36 to 60 inches
Content of rock fragments: Ap horizon—less than 5 percent; Btg and Bt horizons—0 to 10 percent; C horizon—5 to 15 percent

Ap horizon:
Color—hue of 10YR, value of 2 or 3, and chroma of 1; value of 4 in overwash phase
Texture—silty clay loam or silt loam

Btg horizon:
Color—hue of 10YR, 2.5Y, or 5Y, value of 4 to 6, and chroma of 1 or 2
Texture—silty clay loam or clay loam

Bt horizon:
Color—hue of 10YR, 2.5Y, or 5Y, value of 4 or 5, and chroma of 3 or 4
Texture—silty clay loam or clay loam

C horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 to 4
Texture—loam

Lindside Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Recent silty alluvium
Landform: Flood plains
Slope: 0 to 2 percent
Adjacent soils: Aetna, Beaucoup, and Patton

Taxonomic classification: Fine-silty, mixed, active, mesic Fluvaquentic Eutrudepts

Typical Pedon

Lindside silt loam, occasionally flooded, about 1.3 miles east of Bremen, in Rush Creek Township, Fairfield County, Ohio; about 1,600 feet north and 1,300 feet east of the southwest corner of sec. 14, T. 16 N., R. 17 W.

Ap—0 to 9 inches; brown (10YR 5/3) silt loam, light brownish gray (10YR 6/2) dry; weak medium

subangular blocky structure parting to weak medium granular; friable; many fine roots; strongly acid; abrupt smooth boundary.

Bw1—9 to 14 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; common fine roots; few faint dark yellowish brown (10YR 4/4) films on faces of peds; few distinct dark grayish brown (2.5Y 6/3) clay depletions on faces of peds; few fine prominent black (10YR 2/1) masses of iron and manganese accumulation; strongly acid; clear smooth boundary.

Bw2—14 to 20 inches; yellowish brown (10YR 5/6) silty clay loam; weak medium subangular blocky structure; friable; common fine roots; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few distinct dark grayish brown (2.5Y 6/3) clay depletions on faces of peds; few fine prominent black (10YR 2/1) masses of iron and manganese accumulation; strongly acid; clear smooth boundary.

Bw3—20 to 31 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium subangular blocky structure; friable; few fine roots; few faint dark yellowish brown (10YR 4/4) films on faces of peds; common medium distinct light brownish gray (2.5Y 6/2) iron depletions on faces of peds; common medium faint yellowish brown (10YR 5/8) masses of iron accumulation on faces of peds; common fine prominent black (10YR 2/1) masses of iron and manganese accumulation; moderately acid; clear wavy boundary.

BC—31 to 40 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium subangular blocky structure; friable; few distinct yellowish brown (10YR 5/4) clay films on faces of peds; few medium prominent brownish yellow (10YR 6/8) masses of iron accumulation on faces of peds; few fine and medium prominent black (10YR 2/1) masses of iron and manganese accumulation; neutral; gradual smooth boundary.

C1—40 to 53 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; common coarse prominent brownish yellow (10YR 6/6) and strong brown (7.5YR 5/8) masses of iron accumulation; very few fine prominent black (10YR 2/1) masses of iron and manganese accumulation; neutral; gradual smooth boundary.

C2—53 to 80 inches; light brownish gray (2.5Y 6/2), stratified silt loam; thin strata of fine sandy loam; massive; thin bedded; friable; common coarse prominent brownish yellow (10YR 6/6) and strong brown (7.5YR 5/8) masses of iron accumulation filling old root channels; few fine prominent black (10YR 2/1) masses of iron and manganese accumulation; slightly alkaline.

Range in Characteristics

Thickness of the solum: 25 to 50 inches
Depth to bedrock: More than 80 inches
Content of rock fragments: Ap horizon—0 to 5 percent; Bw horizon—0 to 5 percent; C horizon—0 to 30 percent

Ap horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 or 3
Texture—silt loam

Bw horizon:
Color—hue of 10YR, 7.5YR, or 2.5Y, value of 4 or 5, and chroma of 3 to 6; thin layers with value of 2 or 3 and chroma of 2 in some pedons
Texture—silt loam or silty clay loam; thin strata of very fine sandy loam, fine sandy loam, loam, or clay loam in some pedons

C horizon:
Color—hue of 7.5YR, 10YR, or 2.5Y, value of 4 to 6, and chroma of 1 to 6
Texture—silty clay loam, silt loam, loam, clay loam, very fine sandy loam, fine sandy loam, or sandy loam; typically stratified; gravelly layers included below a depth of 40 inches

Loudonville Series

Depth class: Moderately deep
Drainage class: Well drained
Parent material: Till over sandstone
Landform: Glaciated hills
Position on the landform: Summits, shoulders, footslopes, and backslopes
Slope: 2 to 70 percent
Adjacent soils: Amanda and Steinsburg

Taxonomic classification: Fine-loamy, mixed, active, mesic Ultic Hapludalfs

Typical Pedon

Loudonville silt loam, in an area of Amanda-Loudonville complex, 2 to 6 percent slopes, eroded, about 2.8 miles southwest of Carroll, in Bloom Township, Fairfield County, Ohio; about 200 feet north and 400 feet east of the southwest corner of sec. 14, T. 14 N., R. 20 W.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; friable; common medium and

fine roots; 1 percent rock fragments; moderately acid; abrupt smooth boundary.

BE—5 to 8 inches; yellowish brown (10YR 5/4) silt loam; moderate fine subangular blocky structure; friable; common medium and fine roots; common faint brown (10YR 5/3) clay depletions on faces of peds; 1 percent rock fragments; strongly acid; clear wavy boundary.

Bt1—8 to 18 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; common medium and fine roots; few common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; 5 percent rock fragments; very strongly acid; gradual wavy boundary.

Bt2—18 to 25 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse subangular blocky structure; firm; common fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; 5 percent rock fragments; very strongly acid; abrupt wavy boundary.

Bt3—25 to 36 inches; yellowish brown (10YR 5/4) clay loam; weak coarse subangular blocky structure; very firm; few fine roots; few common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few coarse distinct very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; 10 percent rock fragments; very strongly acid; clear wavy boundary.

2BC—36 to 39 inches; yellowish brown (10YR 5/4) channery loam; moderate medium subangular blocky structure; very firm; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine distinct very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; 20 percent rock fragments; strongly acid; abrupt smooth boundary.

2R—39 to 42 inches; yellowish brown (10YR 5/8), massive sandstone.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments: Ap horizon—0 to 5 percent; Bt horizon—2 to 25 percent; 2BC or 2C horizon—10 to 60 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

Bt horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6
Texture—loam, silt loam, clay loam, or silty clay loam or the gravelly analogs of these textures

2BC or 2C horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6
Texture—sandy loam, loam, loamy sand, silt loam, or silty clay loam or the channery or very channery analogs of these textures

Marengo Series

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Till
Landform: Flats and depressions on Wisconsinan till plains
Slope: 0 to 2 percent
Adjacent soils: Bennington, Condit, and Centerburg

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Marengo clay loam, about 2.5 miles east of Carroll, in Greenfield Township, Fairfield County, Ohio; about 318 feet north and 440 feet west of the southeast corner of sec. 4, T. 15 N., R. 19 W.

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) clay loam, dark grayish brown (10YR 4/2) dry; weak medium granular structure; friable; many fine roots; 2 percent pebbles; neutral; abrupt smooth boundary.

AB—9 to 17 inches; very dark gray (10YR 3/1) silty clay loam; moderate medium prismatic structure parting to strong medium angular blocky; firm; few fine roots; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 2 percent pebbles; neutral; clear smooth boundary.

Bg1—17 to 26 inches; gray (10YR 5/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; common faint very dark gray (10YR 3/1) organic coatings on vertical faces of peds; common medium faint dark gray (10YR 4/1) iron depletions in the matrix; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 5 percent pebbles; neutral; clear wavy boundary.

Bg2—26 to 43 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure; firm; few fine roots; many distinct very dark gray (10YR 3/1) organo-clay films on vertical faces of

peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 5 percent pebbles; neutral; gradual wavy boundary.

BC—43 to 68 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse prismatic structure; firm; many medium distinct gray (10YR 5/1) iron depletions in the matrix; many medium distinct brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; 5 percent pebbles; slightly alkaline; clear wavy boundary.

C—68 to 83 inches; dark grayish brown (2.5Y 4/2) loam; massive; very firm; many medium faint gray (10YR 5/1) iron depletions in the matrix; many medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in matrix; 10 percent pebbles; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 40 to 75 inches
Thickness of the mollic epipedon: 10 to 24 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 40 to 80 inches
Content of rock fragments: Ap horizon—2 to 10 percent; Bg horizon—2 to 15 percent; C horizon—2 to 20 percent
Kind of rock fragments: Commonly shale, sandstone, and limestone fragments; a few igneous erratics

Ap or A horizon:
Color—hue of 10YR or 2.5Y, value of 2, 2.5, or 3, and chroma of 1 or 2 (value of 4 in the overwash phase)
Texture—clay loam, silt loam, or silty clay loam

Bg horizon:
Color—hue of 10YR to 5Y or N, value of 4 to 6, and chroma of 0 to 2
Texture—silty clay loam, clay loam, silt loam, or loam

C horizon:
Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 4
Texture—loam or clay loam

McGary Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Glaciolacustrine sediments
Landform: Lake plains
Position on the landform: Summits
Slope: 2 to 6 percent
Adjacent soils: Montgomery and Canal

Taxonomic classification: Fine, mixed, active, mesic Aeric Epiaqualfs

Typical Pedon

McGary silt loam, 2 to 6 percent slopes, about 2 miles southeast of Baltimore, in Walnut Township, Fairfield County, Ohio; about 2,000 feet north and 1,800 feet west of the southeast corner of sec. 30, T. 16 N., R. 18 W.

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; weak coarse granular structure; firm; many fine and medium roots; slightly acid; abrupt smooth boundary.

Bt—7 to 20 inches; grayish brown (10YR 5/2) silty clay loam; moderate coarse subangular blocky structure; firm; common medium roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; many medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; few medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common pressure faces; neutral; clear smooth boundary.

Btg—20 to 30 inches; brown (10YR 4/3) silty clay; moderate coarse prismatic structure parting to moderate coarse angular blocky; very firm; common medium roots; many faint dark gray (10YR 4/1) clay films on faces of peds; many medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; few medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common pressure faces; neutral; gradual wavy boundary.

BC—30 to 44 inches; yellowish brown (10YR 5/4) silty clay loam and silty clay; thin layers of clay loam and silt loam; moderate coarse prismatic structure parting to moderate thin platy; firm; common faint dark gray (10YR 4/1) clay films on vertical faces of peds; common medium distinct dark grayish brown (10YR 4/1) iron depletions in the matrix; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; slightly alkaline; abrupt smooth boundary.

C1—44 to 56 inches; yellowish brown (10YR 5/4) silty clay loam; thin layers of silt loam; massive; firm; common medium distinct gray (10YR 5/1) iron depletions along vertical seams; slightly effervescent; moderately alkaline; clear smooth boundary.

C2—56 to 80 inches; brown (10YR 4/3) silty clay; massive; very firm; common medium distinct gray (10YR 5/1) and dark gray (10YR 4/1) iron depletions along vertical seams; common medium distinct yellowish brown (10YR 5/4) masses of iron

accumulation; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 24 to 50 inches
Depth to carbonates: 22 to 56 inches
Content of rock fragments: Ap and Bt horizons—0 percent; C horizon—0 to 5 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—silt loam

Bt horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 6
Texture—silty clay or silty clay loam

BC horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 6
Texture—silty clay or silty clay loam; thin layers of silt loam or clay loam

C horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 6
Texture—stratified silty clay or silty clay loam; thin layers of silt loam

Medway Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Loamy alluvium
Landform: Flood plains
Slope: 0 to 2 percent
Adjacent soils: Aetna, Eel, and Gessie

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon

Medway silt loam, occasionally flooded, about 3 miles northwest of Baltimore, in Liberty Township, Fairfield County, Ohio; about 1,100 feet south and 800 feet west of the northeast corner of sec. 20, T. 16 N., R. 19 W.

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; many fine and medium roots; many very dark grayish brown (10YR 3/1) organic coatings on faces of peds; few rock fragments; slightly acid; abrupt wavy boundary.

A—7 to 15 inches; very dark brown (10YR 2/2) silt loam; strong medium subangular blocky structure; very friable; many fine and medium roots; many black (10YR 2/1) organic coatings on faces of peds; few rock fragments; slightly acid; clear wavy boundary.

Bw1—15 to 24 inches; dark grayish brown (2.5Y 4/3) silt loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; common fine roots; many medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; 5 percent rock fragments; slightly acid; clear wavy boundary.

Bw2—24 to 30 inches; dark grayish brown (2.5Y 4/3) clay loam; moderate medium prismatic structure; friable; few fine roots; many medium distinct dark gray (5Y 4/1) iron depletions in the matrix; few fine distinct very dark brown (10YR 2/2) masses of iron and manganese accumulation; many faint dark grayish brown (2.5Y 4/2) organic coatings on vertical faces of peds; 5 percent rock fragments; slightly acid; clear wavy boundary.

Bw3—30 to 40 inches; yellowish brown (10YR 5/4) loam; moderate coarse prismatic structure; friable; common fine distinct light brownish gray (2.5Y 6/2) iron depletions; few fine distinct very dark brown (10YR 2/2) masses of iron and manganese accumulation; few fine faint dark brown (10YR 3/3) organic coatings on vertical faces of peds; 5 percent rock fragments; slightly acid; clear wavy boundary.

C1—40 to 51 inches; yellowish brown (10YR 5/4) gravelly loam; massive; friable; few faint dark brown (10YR 3/3) organic coatings along vertical seams; 20 percent rock fragments (gravel); slightly acid; clear wavy boundary.

C2—51 to 60 inches; yellowish brown (10YR 5/4), stratified gravelly loam; massive; very friable; few faint dark brown (10YR 3/3) organic coatings along vertical seams; 20 percent rock fragments (gravel); neutral; gradual wavy boundary.

C3—60 to 80 inches; yellowish brown (10YR 5/4), stratified gravelly loam; massive; loose; 30 percent rock fragments (gravel); strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 28 to 50 inches
Thickness of the mollic epipedon: 10 to 24 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: More than 40 inches

Content of rock fragments: Ap and Bw horizons—0 to 14 percent; C horizon—0 to 34 percent

Ap horizon:
Color—hue of 10YR, value of 2 or 3, and chroma of 1 to 3
Texture—silt loam

Bw horizon:
Color—hue of 2.5Y, 10YR, or 7.5YR, value of 3 to 5, and chroma of 2 to 4
Texture—dominantly stratified silt loam, loam, or clay loam; fine sandy loam, silty clay loam, or sandy clay loam included in the range

C horizon:
Color—hue of 2.5Y, 10YR, or 7.5YR, value of 4 or 5, and chroma of 1 to 6
Texture—stratified silt loam, loam, clay loam, silty clay loam, or sandy loam or the gravelly analogs of these textures

Miamian Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Thin layer of loess and loamy till
Landform: Wisconsinan till plains
Position on the landform: Summits, shoulders, backslopes, and footslopes
Slope: 2 to 20 percent
Adjacent soils: Crosby, Kokomo, and Thrifton

Taxonomic classification: Fine, mixed, active, mesic Oxyaquic Hapludalfs

Figure 25.—Profile of a Miamian soil. The subsoil is dark yellowish brown over the lighter colored till material.

Typical Pedon

Miamian silt loam, 2 to 6 percent slopes, eroded (fig. 25), about 6.5 miles northwest of Amanda, in Amanda Township, Fairfield County, Ohio; about 1,200 feet north and 1,600 feet east of the southwest corner of sec. 5, T. 13 N., R. 20 W.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium granular structure; friable; many fine roots; 10 percent yellowish brown (10YR 5/4) subsoil material; 5 percent rock fragments; neutral; abrupt smooth boundary.

Bt1—9 to 20 inches; yellowish brown (10YR 5/4) silty clay; moderate medium subangular blocky structure; firm; common fine and medium roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct dark grayish brown (10YR 4/2) organic coatings in pores; 5 percent rock fragments; strongly acid; clear wavy boundary.

Bt2—20 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse subangular blocky structure; firm; common fine and medium roots; many faint brown (7.5YR 4/4) clay films on faces of peds; 5 percent rock fragments; strongly acid; gradual wavy boundary.

Bt3—26 to 32 inches; brown (10YR 4/3) silty clay loam; moderate coarse subangular blocky structure; firm; common faint dark yellowish brown (10YR 4/4) clay films on vertical faces of peds; 10 percent rock fragments; slightly effervescent in places; neutral; abrupt wavy boundary.

Cd1—32 to 40 inches; brown (10YR 4/3) clay loam; massive; very firm; few faint dark yellowish brown (10YR 4/4) clay films on vertical seams; common medium distinct light gray (10YR 7/2) calcium

carbonate accumulations along vertical seams; 10 percent rock fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cd2—40 to 65 inches; brown (10YR 4/3) clay loam; massive; very firm; few faint dark yellowish brown (10YR 4/4) clay films on vertical seams; common medium distinct light gray (10YR 7/2) calcium carbonate accumulations along vertical seams; 10 percent rock fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cd3—65 to 80 inches; brown (10YR 4/3) clay loam; massive; very firm; 10 percent rock fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to bedrock: More than 60 inches
Depth to carbonates: 18 to 40 inches
Thickness of the loess mantle: 0 to 18 inches
Content of rock fragments: Ap horizon—0 to 15 percent; Bt horizon—2 to 15 percent; Cd horizon—2 to 15 percent

Ap horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 or 3
Texture—silt loam or silty clay loam

Bt horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6
Texture—clay loam, silty clay, clay, or silty clay loam

Cd horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 to 4
Texture—loam, silt loam, or clay loam

Montgomery Series

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Glaciolacustrine sediments
Landform: Flats and depressions on lake plains
Slope: 0 to 2 percent
Adjacent soils: Fitchville, McGary, and Canal

Taxonomic classification: Fine, mixed, active, mesic Vertic Endoaquolls

Typical Pedon

Montgomery silty clay loam, about 2 miles east of Baltimore, in Walnut Township, Fairfield County, Ohio; about 750 feet south and 900 feet west of the northeast corner of sec. 19, T. 16 N., R. 18 W.

Ap—0 to 10 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate coarse subangular blocky structure; firm; many medium and fine roots; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; abrupt smooth boundary.

Bg1—10 to 22 inches; dark gray (10YR 4/1) silty clay; moderate medium prismatic structure parting to weak medium angular blocky; firm; common fine roots; common fine distinct grayish brown (2.5Y 5/3) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Bg2—22 to 31 inches; grayish brown (10YR 5/2) silty clay; moderate medium prismatic structure; firm; common fine roots; common faint grayish brown (2.5Y 5/2) clay depletions along vertical faces of peds; many coarse distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many distinct very dark gray (10YR 3/1) organic coatings on vertical faces of peds; slightly alkaline; gradual wavy boundary.

Bg3—31 to 40 inches; gray (10YR 5/1) silty clay; moderate coarse prismatic structure; firm; few fine roots; many coarse distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many distinct very dark gray (10YR 3/1) organic coatings on vertical faces of peds; common slickensides on diagonal surfaces; slightly alkaline; abrupt wavy boundary.

BCg—40 to 57 inches; dark gray (10YR 4/1) silty clay; weak coarse prismatic structure; firm; many fine distinct brown (10YR 4/3) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline; gradual wavy boundary.

Cg1—57 to 68 inches; dark gray (10YR 4/1) gravelly clay loam; massive; laminated; firm; many fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; 20 percent rock fragments, mostly fine gravel; strongly effervescent; slightly alkaline; abrupt wavy boundary.

Cg2—68 to 80 inches; dark grayish brown (2.5Y 4/2), stratified silty clay and silty clay loam; massive; firm; many fine distinct brown (10YR 4/3) masses of iron accumulation in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 40 to 60 inches
Thickness of the mollic epipedon: 10 to 15 inches

Depth to bedrock: More than 80 inches
Depth to carbonates: More than 40 inches
Content of rock fragments: Ap and Bg horizons—0 percent; Cg horizon—typically 0 percent, but 0 to 20 percent in some thin subhorizons

Ap horizon:
Color—hue of 10YR, value of 2 or 3, and chroma of 1 or 2
Texture—silty clay loam

Bg horizon:
Color—hue of 10YR, 2.5Y, or 5Y, value of 3 to 6, and chroma of 1 or 2
Texture—silty clay loam or silty clay

BCg horizon:
Color—hue of 10YR, 2.5Y, or 5Y, value of 3 to 6, and chroma of 1 to 6
Texture—silty clay loam or silty clay

Cg horizon:
Color—hue of 10YR, 2.5Y, or 5Y, value of 4 to 6, and chroma of 1 to 4
Texture—stratified or laminated silty clay and silty clay loam; thin layers of silt loam or gravelly clay loam

Muskego Series

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Organic deposits over limnic sediments
Landform: Flats and depressions on till plains, outwash terraces, and lake plains
Slope: 0 to 2 percent
Adjacent soils: Patton, Rockmill, and Westland

Taxonomic classification: Coprogenous, euic, mesic Limnic Haplosaprists

Typical Pedon

Muskego muck, about 1.5 miles northwest of Carroll, in Bloom Township, Fairfield County, Ohio; about 2,000 feet south and 200 feet east of the northwest corner of sec. 1, T. 14 N., R. 20 W.

Oa1—0 to 5 inches; muck (sapric material), black (10YR 2/1) broken face and rubbed; 0 percent fiber, 0 percent after rubbing; weak fine subangular blocky structure parting to moderate fine granular; very friable; many fine roots; common fine strong brown (7.5YR 4/6) stains; neutral; clear wavy boundary.

Oa2—5 to 12 inches; muck (sapric material), black (10YR 2/1) broken face and rubbed; 0 percent fiber, 0 percent after rubbing; moderate medium subangular blocky structure parting to weak medium granular; very friable; many fine and common medium roots; few woody fragments; few faint dark red (2.5YR 3/6) stains; moderately alkaline; clear wavy boundary.

Oa3—12 to 24 inches; muck (sapric material), black (10YR 2/1) broken face; 5 percent fiber, 0 percent after rubbing; strong very coarse prismatic structure parting to moderate medium prismatic; friable; few medium distinct dark red (2.5YR 3/6) coatings; moderately alkaline; clear wavy boundary.

Oa4—24 to 27 inches; muck (sapric material), very dark brown (10YR 2/2) broken face; 10 percent fiber, 0 percent after rubbing; laminated; friable; common coarse wood fragments; moderately alkaline; abrupt smooth boundary.

Lco1—27 to 59 inches; dark gray (5Y 4/1) coprogenous earth; massive; friable; common medium distinct strong brown (7.5YR 5/6) coatings; 25 percent very pale brown (10YR 8/2) shells; violently effervescent; moderately alkaline; gradual wavy boundary.

Lco2—59 to 80 inches; gray (5Y 5/1) coprogenous earth; massive; 15 percent very pale brown (10YR 8/2) shells; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the herbaceous organic layers and depth to coprogenous material (sedimentary peat): 16 to 51 inches
Depth to bedrock: More than 80 inches

Surface tier:
Color—hue of 5YR to 10YR or N, value of 2 or 3, and chroma of 0 to 2
Texture—muck (sapric material)

Lco horizon:
Color—hue of 10YR to 5Y, value of 2 to 5, and chroma of 1 to 3
Texture—coprogenous earth

Negley Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Outwash
Landform: Illinoian outwash terraces

Position on the landform: Risers and backslopes
Slope: 12 to 35 percent
Adjacent soils: Alford, Pike, and Fox

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Paleudalfs

Typical Pedon

Negley loam, 20 to 35 percent slopes, about 3.5 miles southeast of Lancaster, in Berne Township, Fairfield County, Ohio; about 1,800 feet north and 900 feet west of the southeast corner of sec. 20, T. 14 N., R. 18 W.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) loam, gray (10YR 5/2) dry; weak medium granular structure; very friable; many fine, medium, and coarse roots; 10 percent rock fragments; slightly acid; clear wavy boundary.

BA—5 to 9 inches; brown (10YR 4/3) and very dark grayish brown (10YR 3/2) gravelly loam; moderate medium subangular blocky structure; very friable; common fine to coarse roots; few fine brown (10YR 4/3) clay films on faces of peds; 15 percent rock fragments; very strongly acid; clear wavy boundary.

Bt1—9 to 17 inches; strong brown (7.5YR 4/6) gravelly loam; moderate medium subangular blocky structure; friable; common fine to coarse roots; common faint brown (7.5YR 4/4) clay films on faces of peds; 30 percent rock fragments; very strongly acid; clear wavy boundary.

Bt2—17 to 24 inches; brown (7.5YR 4/4) very gravelly sandy loam; moderate coarse subangular blocky structure; very friable; common fine to coarse roots; common faint brown (7.5YR 4/4) and few distinct reddish brown (5YR 4/4) clay films on faces of peds; 45 percent rock fragments; very strongly acid; clear wavy boundary.

Bt3—24 to 40 inches; strong brown (7.5YR 4/6) gravelly loam; weak coarse subangular blocky structure; friable; few fine and coarse roots; common distinct reddish brown (5YR 4/4) clay films on faces of peds; 25 percent rock fragments; very strongly acid; clear wavy boundary.

Bt4—40 to 52 inches; strong brown (7.5YR 4/6) gravelly loam; moderate medium and coarse subangular blocky structure; friable; few fine roots; common faint dark brown (7.5YR 3/4) clay films on faces of peds; 20 percent rock fragments; very strongly acid; clear wavy boundary.

Bt5—52 to 67 inches; strong brown (7.5YR 4/6) gravelly clay loam; moderate medium and coarse subangular blocky structure; friable; few fine roots; many faint dark brown (7.5YR 3/4) clay films on faces of peds; few medium faint strong brown (7.5YR 5/6) masses of iron accumulation; 15 percent rock fragments; very strongly acid; clear wavy boundary.

Bt6—67 to 92 inches; dark brown (7.5YR 4/4) gravelly sandy clay loam; weak medium subangular blocky structure; very friable; few fine roots; many faint dark brown (7.5YR 3/4) clay films on faces of peds; few fine roots; 20 percent rock fragments; strongly acid; clear wavy boundary.

C—92 to 101 inches; dark brown (7.5YR 4/4), stratified gravelly sandy loam and loamy sand; massive; very friable; 20 percent rock fragments, including some shale fragments; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 80 to 150 inches
Depth to bedrock: More than 150 inches
Depth to carbonates: More than 80 inches
Thickness of the loess mantle: Less than 20 inches
Content of rock fragments: A horizon—0 to 14 percent; Bt horizon—typically 2 to 35 percent (2 to 45 percent in some thin subhorizons); C horizon—5 to 35 percent

A horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—loam

BE or BA horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—silt loam, loam, or clay loam or the gravelly analogs of these textures

Bt horizon:
Color—hue of 7.5YR or 5YR, value of 4 or 5, and chroma of 3 to 8
Texture—loam, clay loam, sandy clay loam, gravelly loam, gravelly clay loam, gravelly sandy clay loam, or sandy clay; sandy loam included in the lower part

BC horizon (if it occurs):
Color—hue of 10YR, 7.5YR, or 5YR, value of 4 or 5, and chroma of 3 to 8
Texture—sandy clay loam, sandy loam, coarse sandy loam, or clay loam or the gravelly analogs of these textures

C horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 8
Texture—stratified or dominantly coarse sandy loam, gravelly sand, gravelly sandy loam, or gravelly loamy sand

Newark Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Recent silty alluvium
Landform: Flood plains
Slope: 0 to 2 percent
Adjacent soils: Patton and Sebring

Taxonomic classification: Fine-silty, mixed, active, nonacid, mesic Aeric Fluvaquents

Typical Pedon

Newark silt loam, occasionally flooded, about 2 miles southeast of Bremen, in Rush Creek Township, Fairfield County, Ohio; about 1,000 feet south and 2,500 feet west of the northeast corner of sec. 27, T. 16 N., R. 17 W.

Ap—0 to 11 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; common fine and medium roots; neutral; abrupt smooth boundary.

A—11 to 14 inches; dark gray (10YR 4/1) silt loam; weak coarse granular structure; friable; few fine and medium roots; neutral; clear wavy boundary.

BEg—14 to 20 inches; grayish brown (2.5Y 5/2) silt loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many medium distinct dark gray (10YR 4/1) clay depletions on faces of peds; many medium distinct yellowish brown (10YR 5/4) masses of iron accumulation throughout; neutral; clear wavy boundary.

Bw—20 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure; friable; few fine roots; common medium prominent gray (5Y 5/1) iron depletions; many distinct grayish brown (10YR 5/2) clay depletions on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; slightly acid; clear wavy boundary.

Bg—30 to 50 inches; grayish brown (2.5Y 5/2) silt loam; moderate coarse prismatic structure; friable; few fine roots; many medium distinct yellowish brown (10YR 5/4) masses of iron accumulation; many coarse prominent dark brown (7.5YR 3/2) masses of iron and manganese accumulation; moderately acid; gradual wavy boundary.

C1—50 to 70 inches; yellowish brown (10YR 5/6), stratified silt loam; massive; friable; common medium distinct dark gray (10YR 6/1) iron depletions; moderately acid; gradual wavy boundary.

C2—70 to 80 inches; yellowish brown (10YR 5/4) loam; massive; thin-bedded laminations; friable; common medium distinct dark gray (10YR 6/1) iron depletions; neutral.

Range in Characteristics

Thickness of the solum: 20 to 50 inches
Depth to carbonates: More than 40 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: Ap or A horizon—0 to 5 percent; Bw or Bg horizon—0 to 5 percent; C horizon—0 to 15 percent above a depth of 40 inches and 0 to 60 percent below a depth of 40 inches

Ap or A horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4
Texture—silt loam

Bw horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4
Texture—silt loam or silty clay loam

Bg horizon:
Color—hue of 7.5YR to 2.5Y or N, value of 4 to 7, and chroma of 0 to 2
Texture—silt loam or silty clay loam

C horizon:
Color—hue of 2.5Y to 7.5YR, value of 4 to 7, and chroma of 3 or 4
Texture—stratified or bedded silt loam and silty clay loam; thin strata of loam or fine sandy loam

Ockley Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Loamy sediments over sand and gravel
Landform: Wisconsinan outwash terraces
Position on the landform: Treads and backslopes
Slope: 0 to 20 percent
Adjacent soils: Amanda, Thackery, and Westland

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Ockley silt loam, 0 to 2 percent slopes, about 5 miles northwest of Lancaster, in Greenfield Township, Fairfield County, Ohio; about 750 feet south and 1,400 feet east of the northwest corner of sec. 28, T. 15 N., R. 19 W.

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, brown (10YR 5/3) dry; weak medium granular structure; friable; many fine roots; brown (7.5YR 4/2) organic coatings on faces of peds; 5 percent rock fragments; moderately acid; abrupt wavy boundary.
Bt1—10 to 16 inches; dark yellowish brown (10YR 4/4) loam; moderate medium subangular blocky structure; friable; many fine roots; 10 percent medium brown (7.5YR 4/2) worm channels and krotovinas; 10 percent rock fragments; moderately acid; clear smooth boundary.
2Bt2—16 to 30 inches; dark brown (7.5YR 4/4) gravelly clay loam; moderate medium subangular blocky structure; firm; few fine roots; few faint dark yellowish brown (10YR 3/4) clay films on faces of peds; 20 percent rock fragments; slightly acid; gradual wavy boundary.
2Bt3—30 to 42 inches; dark brown (7.5YR 4/4) gravelly sandy clay loam; moderate medium subangular blocky structure; firm; few fine roots; few faint dark yellowish brown (10YR 3/4) clay films on faces of peds; 20 percent rock fragments; slightly acid; clear wavy boundary.
2BC—42 to 50 inches; brown (7.5YR 4/4) gravelly sandy loam; weak coarse subangular blocky structure; very friable; clay bridging between sand grains; 15 percent rock fragments; neutral; abrupt irregular boundary.
2C—50 to 80 inches; brown (10YR 4/3), stratified sand and very gravelly sand; single grained; loose; 40 percent rock fragments (fine gravel and some shale); strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 40 to 72 inches
Depth to the base of the argillic horizon: 40 to 70 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 40 to 72 inches
Thickness of the loess mantle: 0 to 20 inches
Content of rock fragments: A and Bt horizons—0 to 10 percent; 2Bt horizon—10 to 30 percent; 2C horizon—0 to 60 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—silt loam

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6
Texture—silt loam, loam, or silty clay loam

2Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6
Texture—clay loam, sandy loam, sandy clay, or sandy clay loam or the gravelly analogs of these textures

2C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4
Texture—stratified sand or loamy coarse sand or the gravelly or very gravelly analogs of these textures

Patton Series

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Glaciolacustrine deposits
Landform: Flats and depressions on lake plains
Slope: 0 to 2 percent
Adjacent soils: Fitchville and Glenford

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Patton silty clay loam, about 2.2 miles northeast of Oakthorpe, in Richland Township, Fairfield County, Ohio; about 2,300 feet south and 2,300 feet west of the northeast corner of sec. 3, T. 17 N., R. 17 W.

Ap—0 to 9 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; firm; many fine roots; many faint very dark gray (N 3/0) organic coatings on faces of peds; neutral; clear wavy boundary.
A—9 to 15 inches; very dark gray (10YR 3/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; many fine roots; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; neutral; abrupt wavy boundary.
Btg—15 to 23 inches; gray (10YR 5/1) silty clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; friable; common fine roots; few faint gray (10YR 5/1) clay films on vertical faces of peds; few medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common distinct black (10YR 2/1) organic coatings; neutral; clear wavy boundary.
Bg—23 to 36 inches; gray (10YR 5/1) silty clay loam; weak coarse prismatic structure; firm; few fine

roots; few medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine faint very dark gray (10YR 3/1) organic coatings on vertical faces of peds; neutral; clear wavy boundary.

BCg—36 to 48 inches; gray (10YR 5/1) silty clay loam; weak medium subangular blocky structure; firm; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Cg1—48 to 60 inches; gray (5Y 5/1) silty clay loam; massive; firm; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Cg2—60 to 68 inches; dark gray (10YR 4/1) silty clay loam; massive; firm; laminated; neutral; clear smooth boundary.

Cg3—68 to 73 inches; very dark brown (10YR 2/2) mucky silt; massive; friable; neutral; clear smooth boundary.

Cg4—73 to 80 inches; dark gray (10YR 4/1) silt loam; massive; friable; laminated; slightly alkaline; clear smooth boundary.

Cg5—80 to 83 inches; gray (10YR 5/1) loam; massive; friable; grayish green (5G 5/2) iron depletions; slightly alkaline.

Range in Characteristics

Thickness of the solum: 40 to 60 inches
Thickness of the mollic epipedon: 10 to 18 inches
Depth to carbonates: More than 40 inches
Content of rock fragments: A, Bg, and Cg horizons—0 to 5 percent

A horizon:
Color—hue of 10YR, value of 2 or 3, and chroma of 1 or 2
Texture—silty clay loam

Bg or Btg horizon:
Color—hue of 10YR to 5Y, value of 4 or 5, and chroma of 1 or 2
Texture—dominantly silty clay loam; thin subhorizons of silt loam in some pedons

Cg horizon:
Color—hue of 10YR to 5Y, value of 4 or 5, and chroma of 1 or 2
Texture—stratified or laminated silt loam or silty clay loam, commonly with thin strata of loam, fine sandy loam, or sandy loam

Pewamo Series

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Till
Landform: Flats and depressions on Wisconsinan till plains
Slope: 0 to 2 percent
Adjacent soils: Bennington, Cardington, and Condit

Taxonomic classification: Fine, mixed, active, mesic Typic Argiaquolls

Typical Pedon

Pewamo silty clay loam, about 2 miles north of Pickerington, in Violet Township, Fairfield County, Ohio; about 1,850 feet north and 1,750 feet west of the southeast corner of sec. 28, T. 16 N., R. 20 W.

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak medium granular structure; firm; many fine roots; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; 2 percent rock fragments; neutral; abrupt smooth boundary.

AB—10 to 18 inches; very dark gray (10YR 3/1) silty clay; moderate medium subangular blocky structure; firm; few fine roots; many faint black (10YR 2/1) organic coatings on faces of peds; 2 percent rock fragments; neutral; clear smooth boundary.

Btg1—18 to 26 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many faint dark gray (5Y 4/1) clay films on vertical faces of peds; common medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; common distinct very dark gray (10YR 3/1) organic coatings on vertical faces of peds; 2 percent rock fragments; neutral; clear wavy boundary.

Btg2—26 to 46 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; firm; few fine roots; many distinct dark gray (5Y 4/1) clay films on vertical faces of peds; common medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; 2 percent rock fragments; neutral; gradual wavy boundary.

BCg—46 to 60 inches; grayish brown (2.5Y 5/2) silty

clay loam; moderate coarse prismatic structure; firm; many medium faint gray (10YR 5/1) iron depletions in the matrix; many medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; 2 percent rock fragments; slightly alkaline; clear wavy boundary.

Cg—60 to 80 inches; grayish brown (10YR 4/2) clay loam with strata of loam; massive; very firm; many medium faint gray (10YR 5/1) iron depletions in the matrix; many medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; 5 percent rock fragments; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 46 to 70 inches
Thickness of the mollic epipedon: 10 to 17 inches
Depth to the base of the argillic horizon: 28 to 60 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 28 to 60 inches
Content of rock fragments: Ap horizon—0 to 10 percent; Btg horizon—1 to 10 percent; Cg horizon—1 to 14 percent

Ap horizon:
Color—hue of 10YR, value of 2 or 3, and chroma of 1 or 2
Texture—silty clay loam

Btg horizon:
Color—hue of 10YR, 2.5Y, or 5Y, value of 4 to 6, and chroma of 1 to 4
Texture—silty clay loam, clay loam, clay, or silty clay

Cg or C horizon:
Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 4
Texture—clay loam or silty clay loam; strata of loam in some pedons

Pike Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Loess over outwash
Landform: Illinoian outwash terraces
Position on the landform: Treads and risers
Slope: 2 to 12 percent
Adjacent soils: Alford and Negley

Taxonomic classification: Fine-silty, mixed, active, mesic Ultic Hapludalfs

Typical Pedon

Pike silt loam, 2 to 6 percent slopes, about 4.5 miles east of Lancaster, in Berne Township, Fairfield County, Ohio; about 1,600 feet south and 2,300 feet east of the northwest corner of sec. 2, T. 14 N., R. 18 W.

Ap1—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium granular structure; friable; common fine and medium roots; common faint dark yellowish brown (10YR 4/4) organic coatings on faces of peds; 2 percent rock fragments; very strongly acid; abrupt wavy boundary.

Ap2—7 to 13 inches; brown (10YR 4/3) silt loam, brown (10YR 5/3) dry; weak medium subangular blocky structure; friable; many fine roots; common faint dark yellowish brown (10YR 4/4) organic coatings on faces of peds; 2 percent rock fragments; strongly acid; abrupt wavy boundary.

Bt1—13 to 23 inches; dark yellowish brown (10YR 4/6) silt loam; moderate medium subangular blocky structure; firm; few fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; 2 percent rock fragments; strongly acid; gradual wavy boundary.

Bt2—23 to 34 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; firm; few fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; few fine distinct black (10YR 2/1) masses of iron and manganese accumulation; 2 percent rock fragments; strongly acid; clear smooth boundary.

Bt3—34 to 45 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; firm; few fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; few fine prominent black (10YR 2/1) masses of iron and manganese accumulation; 5 percent rock fragments; strongly acid; gradual wavy boundary.

2Btb1—45 to 49 inches; strong brown (7.5YR 5/6) gravelly loam; moderate coarse subangular blocky structure; firm; common faint dark brown (7.5YR 4/4) clay films on faces of peds; 25 percent rock fragments; strongly acid; clear wavy boundary.

2Btb2—49 to 63 inches; strong brown (7.5YR 5/6) sandy clay loam; weak coarse subangular blocky structure; firm; many faint dark brown (7.5YR 4/4) clay films on faces of peds; 5 percent rock fragments; strongly acid; clear wavy boundary.

2Btb3—63 to 80 inches; brown (7.5YR 4/4) gravelly sandy clay loam; moderate medium subangular blocky structure; firm; many faint brown (7.5YR

4/4) clay films on faces of peds; 20 percent rock fragments; strongly acid; clear wavy boundary.

2Btb4—80 to 120 inches; brown (7.5YR 4/4) gravelly loam and gravelly clay loam; weak medium subangular blocky structure; firm; many faint dark brown (7.5YR 3/2) clay films on faces of peds; 20 percent rock fragments; strongly acid.

Range in Characteristics

Thickness of the solum: 60 to more than 100 inches
Depth to bedrock: More than 100 inches
Depth to carbonates: More than 120 inches
Thickness of the loess mantle: 40 to 60 inches
Content of rock fragments: Ap and Bt horizons—0 to 2 percent; 2Btb horizon—0 to 25 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—silt loam

Bt horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 4 to 6
Texture—silt loam or silty clay loam

2Bt horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6
Texture—silt loam

2Btb horizon:
Color—hue of 10YR, 7.5YR, or 5YR, value of 4 or 5, and chroma of 4 to 6
Texture—sandy clay loam, sandy loam, loam, or clay loam or the gravelly analogs of these textures

Rockmill Series

Depth class: Very deep
Drainage class: Very poorly drained
Parent material: Recent alluvium over organic deposits
Landform: Flats and depressions on lake plains, moraines, and flood plains
Slope: 0 to 2 percent
Adjacent soils: Amanda, Carlisle, Muskego, and Patton

Taxonomic classification: Fine-silty, mixed, superactive, nonacid, mesic Thapto-Histic Fluvaquents

Typical Pedon

Rockmill silty clay loam, about 1 mile southwest of Pickerington, in Violet Township, Fairfield County, Ohio; about 1,225 feet north and 750 feet east of the southwest corner of sec. 16, T. 15 N., R. 20 W.

Ap—0 to 13 inches; dark grayish brown (10YR 4/2) silty clay loam, gray (10YR 5/1) dry; weak coarse granular structure; friable; many fine and medium roots; moderately acid; abrupt smooth boundary.

Bg—13 to 18 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine subangular blocky structure; friable; common fine roots; black (10YR 2/1) and very dark grayish brown (10YR 3/2) organic coatings on faces of peds; moderately acid; abrupt wavy boundary.

Oa1—18 to 23 inches; muck (sapric material), black (10YR 2/1) broken face and rubbed; 5 percent fiber when broken, 0 percent rubbed; moderate coarse prismatic structure parting to weak medium platy; friable; gray (10YR 5/1) coatings and fillings of mineral soil on vertical surfaces; few fine roots; moderately acid; clear smooth boundary.

Oa2—23 to 40 inches; muck (sapric material), black (10YR 2/1) broken face and rubbed; 10 percent fiber when broken, 5 percent rubbed; moderate coarse prismatic structure parting to moderate medium platy; friable; few fine roots; strongly acid; clear smooth boundary.

Oa3—40 to 80 inches; muck (sapric material), very dark brown (10YR 2/2) broken face and rubbed; 50 percent fiber when broken, 20 percent rubbed; moderate medium platy structure; very friable; moderately acid.

Range in Characteristics

Thickness of the solum: 16 to 40 inches of mineral soil over the organic deposits
Depth to bedrock: More than 80 inches
Content of rock fragments: Ap and Bg horizons—0 to 10 percent; Oa horizon—0 percent

Ap horizon:
Color—hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 or 2
Texture—silty clay loam

Bg horizon:
Color—hue of 10YR to 5Y, value of 3 to 5, and chroma of 1 or 2
Texture—silt loam or silty clay loam

Oa horizon:
Color—hue of 5YR to 2.5Y or N, value of 2, 2.5, or 3, and chroma of 0 to 2
Texture—muck (sapric material); includes either woody or herbaceous plant material, or both

Rossburg Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Loamy alluvium
Landform: Flood plains
Slope: 0 to 2 percent
Adjacent soils: Fox, Gessie, Ockley, and Shoals

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Fluventic Hapludolls

Typical Pedon

Rossburg silt loam, occasionally flooded, about 1.5 miles southwest of the Interstate 70 interchange with State Route 256 in the City of Columbus, Fairfield County, Ohio; about 360 feet north and 1,900 feet west of the southeast corner of sec. 30, T. 16 N., R. 20 W.

Ap1—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many fine and medium roots; 5 percent rock fragments; slightly acid; clear smooth boundary.

Ap2—8 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure; friable; common fine roots; 5 percent rock fragments; neutral; abrupt smooth boundary.

AB—13 to 22 inches; very dark gray (10YR 3/1) silt loam; moderate medium subangular blocky structure parting to moderate fine granular; friable; common fine roots; many faint black (10YR 2/1) organic coatings on faces of peds; 5 percent rock fragments; neutral; gradual smooth boundary.

Bw1—22 to 32 inches; 50 percent yellowish brown (10YR 5/4) and 50 percent brown (10YR 4/3) silt loam; moderate medium subangular blocky structure; friable; common fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings in pores and on faces of peds; 5 percent rock fragments; neutral; clear wavy boundary.

Bw2—32 to 40 inches; yellowish brown (10YR 5/4) loam; moderate medium prismatic structure; friable; few fine roots; common prominent black (10YR 2/1) krotovinas; few faint brown (10YR 4/3) organic coatings on vertical faces of peds; 5 percent rock fragments; neutral; gradual wavy boundary.

BC—40 to 55 inches; yellowish brown (10YR 5/4) loam; weak coarse prismatic structure; friable; few fine roots; 5 percent rock fragments; neutral; clear wavy boundary.

C1—55 to 65 inches; yellowish brown (10YR 5/4), stratified silt loam and fine sandy loam; massive; friable; many medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; many distinct light gray (10YR 6/1) clay depletions along vertical seams; 2 percent rock fragments; slightly alkaline; clear smooth boundary.

C2—65 to 80 inches; dark yellowish brown (10YR 4/4) gravelly loamy sand; single grained; loose; common fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; 20 percent rock fragments; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 24 to 60 inches
Thickness of the mollic epipedon: 14 to 24 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: More than 40 inches
Content of rock fragments: A horizon—0 to 5 percent; Bw horizon—0 to 10 percent; C horizon—0 to 20 percent

Ap, AB, or A horizon:
Color—hue of 10YR, value of 2 or 3, and chroma of 1 to 3
Texture—silt loam

Bw horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 6
Texture—dominantly silt loam or loam; the range includes fine sandy loam or sandy loam in the lower part

C horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 3 to 6
Texture—stratified loam, silt loam, fine sandy loam, or sandy loam; strata of loamy sand or sand or the gravelly or very gravelly analogs of these textures

Sebring Series

Depth class: Very deep
Drainage class: Poorly drained
Parent material: Silty glaciolacustrine sediments
Landform: Flats on lake plains and stream terraces
Slope: 0 to 2 percent
Adjacent soils: Euclid, Fitchville, Glenford, and Patton

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaqualfs

Typical Pedon

Sebring silt loam, rarely flooded, about 3.5 miles

northeast of Bremen, in Rush Creek Township, Fairfield County, Ohio; about 350 feet south and 1,600 feet west of the northeast corner of sec. 12, T. 16 N., R. 17 W.

Ap—0 to 9 inches; dark grayish brown (2.5Y 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many fine roots; many faint dark gray (10YR 4/1) organic coatings on faces of peds; strongly acid; clear smooth boundary.

BEg—9 to 14 inches; dark gray (10YR 4/1) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; many distinct pale brown (10YR 6/3) clay depletions on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.

Btg1—14 to 19 inches; dark gray (10YR 4/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many faint very dark gray (10YR 3/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Btg2—19 to 32 inches; gray (10YR 5/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many faint dark gray (10YR 4/1) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/4) and many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few distinct black (10YR 2/1) masses of iron and manganese accumulation; moderately acid; clear wavy boundary.

Btg3—32 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate coarse prismatic structure parting to weak medium subangular blocky; firm; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few distinct very dark gray (10YR 3/1) organic coatings on vertical faces of peds; moderately acid; clear wavy boundary.

BC—38 to 53 inches; yellowish brown (10YR 5/6) silt loam; weak medium prismatic structure; firm; few faint gray (10YR 5/1) clay films on faces of peds; common medium prominent grayish brown (2.5Y 5/2) iron depletions and few medium distinct brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; few prominent black (10YR 2/1) masses of iron and manganese accumulation; neutral; clear wavy boundary.

Cg—53 to 80 inches; olive gray (5Y 5/2) silt loam and silty clay loam; massive; laminated; firm; common coarse prominent brownish yellow (10YR 6/8) masses of iron accumulation; slightly acid.

Range in Characteristics

Thickness of the solum: 30 to 55 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: More than 40 inches
Content of rock fragments: Ap, Btg, and Cg horizons—0 to 5 percent

Ap horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 or 2
Texture—silt loam

BEg horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2
Texture—silt loam or silty clay loam

Btg horizon:
Color—hue of 10YR to 5Y or N, value of 4 to 6, and chroma of 0 to 2
Texture—silt loam or silty clay loam

BC horizon:
Color—hue of 10YR to 5Y or N, value of 4 to 6, and chroma of 0 to 6
Texture—silt loam or silty clay loam; thin strata of clay loam or loam

Cg horizon:
Color—hue of 10YR to 5Y or N, value of 4 to 6, chroma of 0 to 6
Texture—stratified or laminated; commonly silt loam or silty clay loam; less commonly thin strata of silty clay, clay loam, loam, fine sandy loam, sandy loam, or very fine sand

Shelocta Series

Depth class: Deep or very deep
Drainage class: Well drained
Parent material: Colluvium weathered from shale, siltstone, and sandstone
Landform: Hills
Position on the landform: Footslopes and backslopes
Slope: 15 to 40 percent
Adjacent soils: Berks and Cruze

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludults

Typical Pedon

Shelocta silt loam, in an area of Shelocta-Berks

complex, 25 to 40 percent slopes, about 4 miles southwest of Bremen, in Rush Creek Township, Fairfield County, Ohio; about 900 feet north and 2,600 feet west of the southeast corner of sec. 31, T. 16 N., R. 17 W.

A—0 to 3 inches; dark brown (10YR 3/3) silt loam; moderate fine granular structure; friable; many fine and common medium roots; 5 percent rock fragments; strongly acid; clear smooth boundary.

BA—3 to 8 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure parting to moderate medium granular; friable; common medium and many fine roots; 10 percent rock fragments; very strongly acid; clear smooth boundary.

Bt1—8 to 15 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; firm; few medium and fine roots; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; 5 percent rock fragments; very strongly acid; clear wavy boundary.

Bt2—15 to 21 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate medium subangular blocky structure; firm; few medium and fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; 5 percent rock fragments; very strongly acid; clear wavy boundary.

Bt3—21 to 36 inches; dark yellowish brown (10YR 4/6) silt loam; moderate medium and coarse subangular blocky structure; firm; few fine and very few medium roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; 10 percent rock fragments; very strongly acid; gradual wavy boundary.

Bt4—36 to 45 inches; yellowish brown (10YR 5/6) silt loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; few fine prominent black (10YR 2/1) masses of iron and manganese concretions; 10 percent rock fragments; very strongly acid; clear wavy boundary.

BC—45 to 56 inches; yellowish brown (10YR 5/6) channery silt loam; weak coarse subangular blocky structure; firm; few fine roots; few dark yellowish brown (10YR 4/4) clay films on vertical faces of peds; few medium prominent light gray (10YR 7/2) iron depletions and common medium prominent light yellowish brown (2.5Y 6/3) masses of iron accumulation in the matrix; few fine prominent black (10YR 2/1) masses of iron and manganese concretions; 25 percent rock fragments; very strongly acid; gradual wavy boundary.

C—56 to 80 inches; yellowish brown (10YR 5/6) very channery silt loam; massive; firm; few medium prominent light gray (10YR 7/2) iron depletions and common medium prominent light yellowish brown (2.5Y 6/3) masses of iron accumulation; few fine prominent black (10YR 2/1) masses of iron and manganese concretions; 35 percent rock fragments; very strongly acid.

Range in Characteristics

Thickness of the solum: 40 to 60 inches
Depth to the base of the argillic horizon: 35 to 55 inches
Depth to bedrock: 48 to more than 120 inches
Content of rock fragments: A horizon—5 to 15 percent; B horizon—5 to 50 percent; C horizon—15 to 70 percent

A or Ap horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4; value of 3 in thin A horizons of some pedons
Texture—silt loam or loam

BA horizon:
Color—hue of 7.5YR to 2.5Y and value and chroma of 4 to 6
Texture—loam, silty clay loam, or silt loam

Bt and BC horizons:
Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8
Texture—silty clay loam or silt loam or the channery or very channery analogs of these textures

C horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 6
Texture—the channery or very channery analogs of silt loam, silty clay loam, clay loam, or loam

Shoals Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Loamy alluvium
Landform: Flood plains
Slope: 0 to 2 percent
Adjacent soils: Beaucoup, Chagrin, Eel, and Gessie

Taxonomic classification: Fine-loamy, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon

Shoals silt loam, occasionally flooded, about 4 miles southeast of Pickerington, in Violet Township, Fairfield County, Ohio; about 2,500 feet south and 1,200 feet west of the northeast corner of sec. 35, T. 15 N., R. 20 W.

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; many fine and medium roots; neutral; abrupt smooth boundary.

BEg—8 to 15 inches; grayish brown (2.5Y 5/2) silt loam; weak medium platy structure parting to moderate fine subangular blocky; friable; many fine roots; common medium distinct dark brown (7.5YR 4/2) iron depletions in the matrix; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium distinct dark gray (10YR 4/1) organic coatings on faces of peds; neutral; clear wavy boundary.

Bg1—15 to 22 inches; dark gray (10YR 4/1) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common medium distinct dark brown (7.5YR 4/2) iron depletions in the matrix; common faint gray (10YR 5/1) clay depletions on faces of peds; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium faint very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; neutral; clear wavy boundary.

Bg2—22 to 37 inches; 60 percent gray (10YR 5/1) and 40 percent strong brown (7.5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; many distinct dark gray (10YR 4/1) clay depletions on vertical faces of peds; common medium distinct very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; moderately acid; clear smooth boundary.

BC—37 to 48 inches; strong brown (7.5YR 5/6) loam; moderate coarse prismatic structure; friable; common medium prominent gray (10YR 5/1) iron depletions in the matrix; many prominent dark gray (10YR 4/1) clay depletions on vertical faces of peds; common medium distinct brown (7.5YR 4/4) masses of iron accumulation in the matrix; slightly acid; gradual wavy boundary.

C1—48 to 57 inches; yellowish brown (10YR 5/6) clay loam; massive; friable; common coarse prominent gray (10YR 5/1) iron depletions in the matrix; common coarse distinct light yellowish brown (10YR 6/4) masses of iron accumulation in the matrix; common coarse prominent black (10YR 2/1) masses of iron and manganese accumulation; 5 percent rock fragments, mostly gravel; slightly acid; clear smooth boundary.

C2—57 to 70 inches; yellowish brown (10YR 5/4) and gray (10YR 5/1) gravelly clay loam; massive; friable; common coarse distinct black (10YR 2/1) masses of iron and manganese accumulation; 20 percent rock fragments, mostly gravel; neutral; clear smooth boundary.

Cg—70 to 80 inches; gray (10YR 5/1) gravelly sandy loam; loose; single grained; common coarse distinct light yellowish brown (10YR 6/4) masses of iron accumulation in the matrix; 25 percent rock fragments, mostly gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 24 to 50 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: More than 40 inches
Content of rock fragments: Ap horizon—0 to 3 percent; Bg or Bw horizon—0 to 3 percent; C or Cg horizon—0 to 30 percent

Ap horizon:
Color—hue of 10YR, value of 3 or 4, and chroma of 2 or 3
Texture—silt loam

Bg or Bw horizon:
Color—hue of 7.5YR, 10YR, or 2.5Y, value of 4 to 6, and chroma of 1 to 6
Texture—silt loam, loam, sandy loam, fine sandy loam, clay loam, or silty clay loam

C or Cg horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 6
Texture—silt loam, loam, sandy loam, sandy clay loam, clay loam, or fine sand; ranges from highly stratified to relatively uniform; gravelly layers below a depth of 40 inches in some pedons

Sleeth Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Parent material: Loamy sediment over stratified sand and gravel

Landform: Wisconsinan outwash terraces
Position on the landform: Treads
Slope: 0 to 2 percent
Adjacent soils: Thackery, Ockley, and Westland

Taxonomic classification: Fine-loamy, mixed, active, mesic Aeric Endoaqualfs

Typical Pedon

Sleeth silt loam, 0 to 2 percent slopes, about 2 miles east of the courthouse in Lancaster, Fairfield County, Ohio; about 900 feet north and 650 feet east of the southwest corner of sec. 4, T. 14 N., R. 18 W.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; common fine roots; many faint dark grayish brown (10YR 4/2) organic coatings on faces of peds; 10 percent rock fragments, mostly gravel; neutral; abrupt smooth boundary.

BE—8 to 17 inches; pale brown (10YR 6/3) loam; weak medium platy structure parting to weak medium subangular blocky; friable; few fine roots; common medium prominent dark brown (7.5YR 3/2) iron depletions in the matrix; common medium faint brown (7.5YR 5/4) masses of iron accumulation in the matrix; 10 percent medium dark grayish brown (10YR 4/2) worm channels and krotovinas; 10 percent rock fragments, mostly gravel; moderately acid; clear wavy boundary.

Btg1—17 to 25 inches; light brownish gray (2.5Y 6/2) clay loam; moderate medium subangular blocky structure; friable; few fine roots; many faint light brownish gray (2.5Y 6/2) clay films on faces of peds; many medium prominent dark brown (7.5YR 3/2) iron depletions in the matrix; many medium prominent brown (7.5YR 5/4) masses of iron accumulation in the matrix; 10 percent rock fragments, mostly gravel; strongly acid; clear wavy boundary.

Btg2—25 to 32 inches; light brownish gray (2.5Y 6/2) gravelly clay loam; moderate medium subangular blocky structure; friable; few fine roots; many faint light brownish gray (2.5Y 6/2) clay films and clay bridges between grains; many medium prominent brown (7.5YR 5/4) iron depletions in the matrix; many medium prominent dark brown (7.5YR 3/2) masses of iron accumulation in the matrix; 15 percent rock fragments, mostly gravel; strongly acid; clear wavy boundary.

2Btg3—32 to 42 inches; light brownish gray (2.5Y 6/2) gravelly clay loam; moderate medium prismatic structure parting to weak coarse subangular blocky; friable; few fine roots; many faint light brownish gray (2.5Y 6/2) clay bridges between grains; many coarse prominent brown (7.5YR 5/4) masses of iron accumulation in the matrix; many coarse prominent dark brown (7.5YR 3/2) manganese concretions throughout; 30 percent rock fragments, mostly gravel; moderately acid; clear wavy boundary.

2Btg4—42 to 54 inches; gray (10YR 5/1) gravelly clay loam; moderate medium prismatic structure; friable; common distinct light brownish gray (10YR 6/2) clay films on faces of peds; many medium distinct dark brown (7.5YR 3/2) iron depletions in the matrix; many medium prominent brown (7.5YR 5/4) masses of iron accumulation in the matrix; 25 percent rock fragments, mostly gravel; slightly alkaline; abrupt wavy boundary.

2Cg1—54 to 64 inches; dark grayish brown (10YR 4/2), stratified very gravelly loamy sand; single grained; very friable; 40 percent gravel and many very dark grayish brown (10YR 3/2) shale fragments; strongly effervescent; slightly alkaline; gradual wavy boundary.

2Cg2—64 to 80 inches; dark grayish brown (10YR 4/2), stratified very gravelly sand; single grained; loose; 40 percent gravel and many very dark grayish brown (10YR 3/2) shale fragments; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 40 to 60 inches
Depth to the base of the argillic horizon: 35 to 55 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 40 to 60 inches
Thickness of the loess mantle: 0 to 20 inches
Content of rock fragments: A horizon—0 to 10 percent; Bt horizon—0 to 15 percent; 2Bt horizon—15 to 30 percent; 2C horizon—10 to 50 percent

Ap horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 1 to 4
Texture—silt loam

Btg horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 4
Texture—clay loam, loam, silty clay loam, silt loam, sandy clay loam, or gravelly clay loam

2Btg horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 4
Texture—gravelly clay loam, gravelly sandy clay loam, gravelly loam, or gravelly sandy loam

2Cg horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 1 or 2
Texture—stratified with the gravelly or very gravelly analogs of loamy coarse sand, loamy sand, coarse sand, and sand

Steinsburg Series

Depth class: Moderately deep
Drainage class: Well drained
Parent material: Residuum derived from weakly cemented sandstone and conglomerate
Landform: Hills
Position on the landform: Summits, shoulders, footslopes, and backslopes
Slope: 6 to 70 percent
Adjacent soils: Loudonville

Taxonomic classification: Coarse-loamy, mixed, active, mesic Typic Dystrudepts

Typical Pedon

Steinsburg sandy loam, in an area of Loudonville-Steinsburg complex, 12 to 20 percent slopes, eroded, about 3 miles southeast of Amanda, in Madison Township, Fairfield County, Ohio; 950 feet west and 1,200 feet north of the southeast corner of sec. 5, T. 13 N., R. 19 W.

Ap1—0 to 4 inches; brown (10YR 4/3) sandy loam, pale brown (10YR 6/3) dry; moderate medium granular structure; very friable; many fine roots; 10 percent rock fragments; neutral; clear smooth boundary.
Ap2—4 to 7 inches; brown (10YR 4/3) sandy loam, pale brown (10YR 6/3) dry; weak coarse granular structure; friable; many fine roots; 14 percent rock fragments; slightly acid; abrupt smooth boundary.
Bw—7 to 30 inches; yellowish brown (10YR 5/6) channery sandy loam; weak coarse subangular blocky structure; very friable; common fine and medium roots; 20 percent rock fragments; moderately acid; gradual wavy boundary.
C—30 to 40 inches; reddish yellow (7.5YR 6/8) channery loamy sand with pockets of yellowish red (5YR 5/6) channery loam; firm; common prominent reddish brown (2.5YR 5/4) coatings on rock fragments; 30 percent hard rock fragments and soft weathered sandstone fragments that crush easily; strongly acid; abrupt smooth boundary.
R—40 to 43 inches; fractured, hard sandstone bedrock.

Range in Characteristics

Thickness of the solum: 12 to 30 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments: Ap and Bw horizons—0 to 20 percent; C horizon—15 to 60 percent

Ap horizon:
Color—hue of 10YR to 5YR, value of 4 or 5, and chroma of 2 to 4
Texture—loam, sandy loam, channery loam, or channery sandy loam

Bw horizon:
Color—hue of 5YR to 10YR, value of 5 or 6, and chroma of 4 to 6
Texture—loam, fine sandy loam, or sandy loam or the channery analogs of these textures

C horizon:
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Texture—the channery or very channery analogs of sandy loam or loamy sand

Stonelick Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Calcareous, stratified alluvium
Landform: Flood plains
Slope: 0 to 2 percent
Adjacent soils: Gessie, Eel, Euclid, and Beaucoup

Taxonomic classification: Coarse-loamy, mixed, superactive, calcareous, mesic Typic Udifluvents

Typical Pedon

Stonelick sandy loam, occasionally flooded, about 3.5 miles west of Baltimore, in Liberty Township, Fairfield County, Ohio; about 1,100 feet north and 1,300 feet west of the southeast corner of sec. 20, T. 16 N., R. 19 W.

Ap—0 to 12 inches; dark brown (10YR 3/3) sandy loam, pale brown (10YR 6/3) dry; weak coarse granular structure; friable; common fine roots; 5 percent rock fragments, mostly gravel; slightly effervescent; slightly alkaline; clear smooth boundary.
AC—12 to 24 inches; dark yellowish brown (10YR 3/4) sandy loam; weak coarse granular structure; friable; few fine roots; common faint dark brown (10YR 3/3) organic coatings on faces of peds; common distinct very dark grayish brown (10YR 3/2) wormcasts; 5 percent rock fragments, mostly

gravel; slightly effervescent; slightly alkaline; abrupt wavy boundary.

C1—24 to 32 inches; dark yellowish brown (10YR 4/4) loamy fine sand; weak medium granular structure; very friable; few fine roots; common faint dark brown (10YR 3/3) organic coatings on faces of peds; 15 percent uncoated sand grains; 2 percent rock fragments, mostly gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

C2—32 to 36 inches; dark yellowish brown (10YR 4/4) sandy loam; massive; friable; few fine roots; common coarse distinct streaks of yellowish red (5YR 5/6) iron accumulation in the matrix; common coarse distinct black (10YR 2/1) masses of iron and manganese accumulation; 2 percent very dark grayish brown (10YR 3/2) krotovina; 2 percent rock fragments, mostly gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

C3—36 to 44 inches; brown (10YR 5/3) loamy sand; massive; loose; common coarse prominent streaks of yellowish red (5YR 5/6) iron accumulation in the matrix; common coarse prominent black (10YR 2/1) masses of iron and manganese oxide accumulation; 5 percent rock fragments, mostly gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2C4—44 to 65 inches; dark yellowish brown (10YR 4/4) very gravelly loamy sand stratified with loamy sand; single grained; loose; 40 percent rock fragments, mostly gravel; strongly effervescent; slightly alkaline; clear wavy boundary.

2C5—65 to 80 inches; dark yellowish brown (10YR 4/4) very gravelly loamy sand stratified with loamy sand; single grained; loose; 50 percent rock fragments, mostly gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 6 to 14 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: Less than 10 inches
Content of rock fragments: Ap and C horizons—0 to 15 percent; 2C horizon below a depth of 40 inches—15 to 60 percent

Ap horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—sandy loam

C horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 4
Texture—loam, sandy loam, silt loam, fine sandy loam, loamy sand, or loamy fine sand

2C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—stratified gravelly or very gravelly loamy sand or sand

Tarlton Series

Depth class: Moderately deep
Drainage class: Moderately well drained
Parent material: Till over clayey residuum derived from shale
Landform: Wisconsinan till plains
Position on the landform: Footslopes, summits, backslopes, and shoulders
Slope: 6 to 12 percent
Adjacent soils: Centerburg, Amanda, and Bennington

Taxonomic classification: Fine, mixed, active, mesic Aquic Hapludalfs

Typical Pedon

Tarlton silt loam, 6 to 12 percent slopes, eroded, about 1.5 miles northwest of Meade, in Pickaway Township, Pickaway County, Ohio; about 2,050 feet north and 1,000 feet east of the southwest corner of sec. 15, T. 10 N., R. 21 W.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; moderate fine and medium granular structure; friable; common fine roots; 1 percent igneous and siltstone pebbles; slightly acid; abrupt smooth boundary.

Bt1—6 to 11 inches; yellowish brown (10YR 5/4) silty clay loam; weak fine and medium subangular blocky structure; firm; few fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; 2 percent igneous and siltstone pebbles; moderately acid; clear wavy boundary.

Bt2—11 to 16 inches; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; firm; few fine roots; common faint brown (10YR 4/3) clay films on faces of peds; common medium prominent grayish brown (10YR 5/2) iron depletions within peds; common fine and medium prominent black (10YR 2/1) masses of iron and manganese accumulation; 5 percent igneous, siltstone, and shale pebbles; strongly acid; clear wavy boundary.

Bt3—16 to 21 inches; yellowish brown (10YR 5/4) clay loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; common faint

dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct grayish brown (10YR 5/2) iron depletions within peds; 7 percent igneous, siltstone, and shale pebbles; slightly acid; clear wavy boundary.

2BC1—21 to 27 inches; dark gray (5Y 4/1) clay; moderate coarse prismatic structure parting to moderate medium angular blocky; firm; few fine roots; few fine distinct grayish brown (10YR 5/2) iron depletions within peds; common medium prominent dark yellowish brown (10YR 4/4) masses of iron accumulation within peds; 5 percent shale fragments; moderately alkaline; gradual wavy boundary.

2BC2—27 to 34 inches; gray (5Y 5/1) clay; weak coarse angular blocky structure; firm; few fine roots; common medium prominent yellowish brown (10YR 5/4) masses of iron accumulation within peds; 10 percent shale fragments; moderately alkaline; clear wavy boundary.

2Cr—34 to 39 inches; very dark grayish brown (10YR 3/2), weathered, rippable, thin-bedded shale; strongly effervescent; moderately alkaline; abrupt smooth boundary.

2R—39 to 42 inches; thin-bedded shale.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to the base of the argillic horizon: 16 to 34 inches
Depth to bedrock: 20 to 40 inches
Depth to carbonates: More than 30 inches
Thickness of the loess mantle: Less than 20 inches
Content of rock fragments: Ap and Bt horizons—0 to 10 percent; 2Bt or 2BC horizon—2 to 10 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—silt loam

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6
Texture—clay loam or silty clay loam

2Bt or 2BC horizon:
Color—hue of 7.5YR, 10YR, or 5Y, value of 4 or 5, and chroma of 1 to 6
Texture—clay, silty clay, silty clay loam, or clay loam

2Cr horizon:
Color—hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 1 to 6

Thackery Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Stratified loamy sediments over sand and gravel
Landform: Wisconsinan outwash terraces
Position on the landform: Treads
Slope: 0 to 6 percent
Adjacent soils: Fox, Sleeth, and Westland

Taxonomic classification: Fine-loamy, mixed, active, mesic Aquic Hapludalfs

Typical Pedon

Thackery silt loam, 0 to 2 percent slopes, about 4 miles northwest of Baltimore, in Liberty Township, Fairfield County, Ohio; about 300 feet north and 2,500 feet west of the southeast corner of sec. 17, T. 16 N., R. 19 W.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine roots; 5 percent rock fragments; strongly acid; abrupt smooth boundary.

BE—8 to 12 inches; brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; firm; many fine roots; few faint dark grayish brown (10YR 4/2) organic coatings on faces of peds; 5 percent rock fragments; strongly acid; clear smooth boundary.

2Bt1—12 to 22 inches; yellowish brown (10YR 5/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; 10 percent rock fragments; strongly acid; clear smooth boundary.

2Bt2—22 to 29 inches; yellowish brown (10YR 5/4) loam; moderate medium subangular blocky structure; firm; few fine roots; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderate medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderate medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 10 percent rock fragments; strongly acid; gradual wavy boundary.

2Bt3—29 to 40 inches; yellowish brown (10YR 5/8) loam; thin strata of silty clay loam; moderate coarse prismatic structure parting to weak coarse subangular blocky; firm; few fine roots; common distinct grayish brown (10YR 5/2) clay films on vertical faces of peds; moderate medium prominent gray (10YR 5/1) iron depletions in the

matrix; 10 percent rock fragments; strongly acid; clear wavy boundary.

2Bt4—40 to 54 inches; brown (10YR 4/3) gravelly clay loam; weak coarse prismatic structure; firm; common distinct dark gray (10YR 4/1) clay bridging between pebbles and sand grains; 20 percent rock fragments, mostly gravel; strongly acid; abrupt smooth boundary.

2BC—54 to 64 inches; dark grayish brown (10YR 4/2) fine sandy loam stratified with loam; weak coarse subangular blocky structure; very friable; slightly alkaline; abrupt smooth boundary.

2C—64 to 80 inches; dark gray (10YR 4/1) gravelly loamy coarse sand stratified with sand; single grained; loose; 25 percent fine gravel and some shale fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 40 to 70 inches
Depth to the base of the argillic horizon: 24 to 60 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 32 to 65 inches
Thickness of the loess mantle: 0 to 30 inches
Content of rock fragments: Ap and Bt horizons—0 to 10 percent; 2Bt horizon—5 to 25 percent; 2C horizon—15 to 70 percent

Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

BE horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 2 to 4
Texture—silt loam or loam

Bt horizon (if it occurs):
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6
Texture—silt loam or silty clay loam

2Bt or 2Btg horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 8
Texture—clay loam, loam, or sandy clay loam; clay or the gravelly analogs of these textures included in some subhorizons of some pedons

2BC or 2BCg horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 4
Texture—loam, sandy clay loam, or fine sandy loam or the gravelly to extremely gravelly analogs of these textures

2C horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 4
Texture—stratified with the gravelly to extremely gravelly analogs of loamy coarse sand or loamy sand

Thrifton Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Till
Landform: Wisconsinan till plains
Position on the landform: Backslopes, shoulders, and footslopes
Slope: 6 to 20 percent
Adjacent soils: Aetna, Celina, Crosby, Kokomo, and Miamian

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Thrifton clay loam, 12 to 20 percent slopes, severely eroded, about 4 miles northwest of Frankfort, in Concord Township, Ross County, Ohio; about 1,915 feet northwest of the junction of OH 138 and CR 95, along CR 95, then 860 feet north:

Ap—0 to 8 inches; dark yellowish brown (10YR 4/4) clay loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; firm; common fine roots; 10 percent pebbles; strongly effervescent; moderately alkaline; clear smooth boundary.

BCt—8 to 14 inches; strong brown (7.5YR 5/6) clay loam; weak medium subangular blocky structure; firm; few fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; 10 percent pebbles; strongly effervescent; moderately alkaline; clear wavy boundary.

Cd—14 to 80 inches; yellowish brown (10YR 5/4) loam; massive; ruptures to weak medium platy structure; firm; 12 percent pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 10 to 20 inches
Carbonates: Throughout the profile
Content of rock fragments: Ap horizon—2 to 15 percent; Bw and Cd horizons—2 to 20 percent

Ap horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 or 4
Texture—clay loam

BCt horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6
Texture—clay loam, loam, gravelly clay loam, or gravelly loam

Cd horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 5
Texture—loam, silt loam, gravelly loam, or gravelly silt loam

Wea Series

Depth class: Very deep
Drainage class: Well drained
Parent material: Stratified loamy sediments over sand and gravel
Landform: Wisconsinan outwash terraces
Position on the landform: Treads
Slope: 0 to 2 percent
Adjacent soils: Fox, Thackery, and Westland

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Argiudolls

Typical Pedon

Wea silt loam, 0 to 2 percent slopes, about 9.5 miles west of Tarlton, in Pickaway Township, Fairfield County, Ohio; about 1,750 feet south and 485 feet east of the northwest corner of sec. 7, T. 3 N., R. 22 W.

Ap—0 to 8 inches; very dark brown (10YR 2/2) silt loam, pale brown (10YR 5/3) dry; moderate fine and medium granular structure; friable; many medium roots; slightly acid; abrupt smooth boundary.

A—8 to 12 inches; black (10YR 2/1) silt loam, pale brown (10YR 5/3) dry; moderate medium subangular blocky structure; friable; common fine roots; 2 percent rock fragments; moderately acid; clear wavy boundary.

AB—12 to 17 inches; very dark grayish brown (10YR 3/2) silt loam, moderate medium and coarse subangular blocky structure; friable; few fine roots; many faint very dark brown (10YR 2/2) organic coatings on faces of peds; 4 percent rock fragments; moderately acid; clear wavy boundary.

Bt1—17 to 21 inches; dark brown (7.5YR 4/4) loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; many distinct very dark grayish brown (10YR 3/2) organic coatings; 4 percent rock fragments; moderately acid; clear wavy boundary.

Bt2—21 to 26 inches; brown (7.5YR 4/4) loam; moderate medium subangular blocky structure; friable; few fine roots; few faint brown (10YR 4/3) clay films on faces of peds; few faint dark brown (10YR 3/3) organic coatings on faces of peds; 5 percent rock fragments; strongly acid; clear wavy boundary.

Bt3—26 to 31 inches; brown (7.5YR 4/4) sandy clay loam; moderate medium subangular blocky structure; firm; few fine roots; few faint brown (10YR 4/3) clay films on faces of peds; 7 percent rock fragments; moderately acid; clear wavy boundary.

2Bt4—31 to 38 inches; brown (7.5YR 4/4) sandy clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; few faint brown (10YR 4/3) clay films on faces of peds; 12 percent rock fragments; slightly acid; clear wavy boundary.

2Bt5—38 to 44 inches; brown (7.5YR 4/4) gravelly clay loam; weak coarse subangular blocky structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; 15 percent rock fragments; neutral; clear wavy boundary.

2Bt6—44 to 49 inches; dark yellowish brown (10YR 4/4) sandy clay loam; weak coarse subangular blocky structure; firm; few faint brown (10YR 4/3) clay films on faces of peds; 10 percent rock fragments; neutral; clear wavy boundary.

2BC—49 to 55 inches; dark yellowish brown (10YR 4/4) gravelly sandy clay loam; weak coarse subangular blocky structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; common white (10YR 8/2) secondary calcium-carbonate streaks; 15 percent rock fragments; slightly effervescent; slightly alkaline; abrupt wavy boundary.

3C—55 to 80 inches; brown (10YR 5/3) very gravelly sand stratified with loamy sand; single grained; loose; 40 percent rock fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the solum: 40 to 70 inches
Depth to the base of the argillic horizon: 40 to 70 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 40 to 70 inches
Thickness of the loess mantle: 0 to 20 inches
Thickness of the mollic epipedon: 10 to 20 inches
Content of rock fragments: Ap horizon—0 to 7 percent; Bt horizon—0 to 10 percent; 2Bt and 2BC horizons—10 to 34 percent; 3C horizon—20 to 50 percent

Ap or A horizon:
Color—hue of 10YR, value of 2 or 3, and chroma of 1 to 3
Texture—silt loam

Bt horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4
Texture—silt loam, silty clay loam, loam, clay loam, or sandy clay loam

2Bt or 2BC horizon:
Color—hue of 10YR, 7.5YR, or 5YR, value of 4 or 5, and chroma of 3 or 4
Texture—gravelly loam, gravelly sandy loam, or gravelly sandy clay loam

3C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4
Texture—stratified with the gravelly or very gravelly analogs of sand or loamy sand

Wellston Series

Depth class: Deep
Drainage class: Well drained
Parent material: Loess over residuum derived from sandstone or siltstone
Landform: Hills
Position on the landform: Summits and shoulders
Slope: 6 to 15 percent
Adjacent soils: Cincinnati, Gilpin, and Zanesville

Taxonomic classification: Fine-silty, mixed, active, mesic Ultic Hapludalfs

Typical Pedon

Wellston silt loam, in an area of Cincinnati-Wellston complex, 6 to 12 percent slopes, eroded, about 4 miles northeast of Bremen, in Rush Creek Township, Fairfield County, Ohio; about 1,600 feet south and 450 feet west of the northeast corner of sec. 1, T. 16 N., R. 17 W.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; common faint yellowish brown (10YR 5/4) mixing of material from the subsoil; moderate fine granular structure grading to moderate fine subangular blocky in the lower part; friable; many fine roots; strongly acid; abrupt smooth boundary.
Bt1—9 to 23 inches; yellowish brown (10YR 5/6) silt loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; common fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine prominent black (10YR 2/1) masses of iron and manganese accumulation; strongly acid; gradual smooth boundary.
Bt2—23 to 29 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; common fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine prominent black (10YR 2/1) masses of iron and manganese accumulation; strongly acid; gradual smooth boundary.
2Bt3—29 to 36 inches; yellowish brown (10YR 5/6) channery silt loam; moderate coarse subangular blocky structure; friable; common fine roots; many faint brown (7.5YR 5/6) clay films on faces of peds; common medium prominent black (10YR 2/1) masses of iron and manganese accumulation; 15 percent rock fragments; strongly acid; abrupt smooth boundary.
2Bt4—36 to 45 inches; light olive brown (2.5Y 5/6) channery clay loam; moderate medium prismatic structure; firm; few fine roots; many distinct brown (7.5YR 5/4) clay films on faces of peds; many medium prominent black (10YR 2/1) masses of iron and manganese accumulation; 25 percent rock fragments; strongly acid; gradual wavy boundary.
2BC—45 to 50 inches; light olive brown (2.5Y 5/6) very channery clay loam; moderate coarse subangular blocky structure; firm; few medium prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; few medium faint strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; many medium prominent black (10YR 2/1) masses of iron and manganese accumulation; 35 percent rock fragments; very strongly acid; clear wavy boundary.
2R—50 to 53 inches; olive (5Y 4/3), fractured siltstone bedrock.

Range in Characteristics

Thickness of the solum: 32 to 55 inches
Depth to bedrock: 40 to 72 inches
Thickness of the loess mantle: 20 to 40 inches
Content of rock fragments: Ap and Bt horizons—0 to 15 percent; 2Bt and 2BC horizons—0 to 60 percent

Ap horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

Bt horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 8
Texture—silt loam or silty clay loam

2Bt horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 3 to 6
Texture—silt loam, loam, silty clay loam, or clay loam or the channery or gravelly analogs of these textures

2BC horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 3 to 6
Texture—silt loam, silty clay loam, clay loam, or loam or the channery, very channery, gravelly, or very gravelly analogs of these textures

Westland Series

Depth class: Very deep
Drainage class: Poorly drained and very poorly drained
Parent material: Silty material over loamy outwash
Landform: Wisconsinan outwash terraces
Position on the landform: Treads
Slope: 0 to 2 percent
Adjacent soils: Fox, Thackery, and Ockley

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Argiaquolls

Typical Pedon

Westland silty clay loam, about 3 miles southeast of Amanda, in Madison Township, Fairfield County, Ohio; on the section line about 600 feet north of the southwest corner of sec. 4, T. 13 N., R. 19 W.

Ap—0 to 7 inches; very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) dry; weak coarse granular structure; firm; many fine roots; 2 percent rock fragments; strongly acid; abrupt smooth boundary.

A—7 to 12 inches; very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium subangular blocky structure; firm; many fine roots; few fine faint dark gray (10YR 4/1) iron depletions in the matrix; few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; 2 percent rock fragments; neutral; abrupt smooth boundary.

Btg1—12 to 16 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine faint gray (10YR 5/1) iron depletions in the matrix; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 2 percent rock fragments; neutral; clear smooth boundary.

Btg2—16 to 24 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; many medium faint gray (5Y 5/1) iron depletions in the matrix; common faint very dark gray (10YR 3/1) organic coatings on vertical faces of peds; 5 percent rock fragments; neutral; clear wavy boundary.

Btg3—24 to 34 inches; gray (5Y 5/1) clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; few faint dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common distinct (10YR 4/1) organic coatings on faces of peds; 5 percent rock fragments; neutral; gradual wavy boundary.

2BCg—34 to 44 inches; gray (10YR 5/1) gravelly loam; weak coarse prismatic structure; firm; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 20 percent rock fragments; slightly effervescent; slightly alkaline; clear wavy boundary.

2Cg1—44 to 60 inches; grayish brown (2.5Y 4/2) gravelly sandy loam; massive; friable; common medium prominent yellow (2.5Y 7/6) masses of iron accumulation in the matrix; common faint olive gray (5Y 4/2) coatings along vertical seams; 25 percent rock fragments (some shale fragments); strongly effervescent; slightly alkaline.

2Cg2—60 to 80 inches; gray (10YR 6/1), stratified gravelly loamy coarse sand; single grained; loose; 25 percent rock fragments (some shale fragments); strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 40 to 60 inches
Thickness of the mollic epipedon: 10 to 20 inches
Depth to the base of the argillic horizon: 25 to 55 inches
Depth to bedrock: More than 80 inches
Depth to carbonates: 40 to 60 inches
Content of rock fragments: A horizon—0 to 5 percent; B horizon—0 to 5 percent; 2B horizon—0 to 15 percent; 2C horizon—15 to 50 percent

Ap and A horizons:
Color—hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 1 to 3
Texture—silt loam or silty clay loam

Btg horizon:
Color—hue of 10YR, 2.5Y, or N, value of 3 to 6, and chroma of 1 or 2
Texture—loam, clay loam, or silty clay loam

2BCg horizon:
Color—hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 1 or 2
Texture—loam, sandy loam, or sandy clay loam or the gravelly or very gravelly analogs of these textures

2C or 2Cg horizon:
Color—hue of 10YR, 2.5Y, or N, value of 3 to 7, and chroma of 1 to 4
Texture—stratified; dominantly the gravelly or very gravelly analogs of coarse sand or loamy coarse sand; the range includes strata of loamy sand, coarse sand, sand, and extremely gravelly sand and includes gravelly sandy loam in the upper part of some pedons

Zanesville Series

Depth class: Very deep
Drainage class: Moderately well drained
Parent material: Loess over residuum derived from siltstone, sandstone, and shale
Landform: Hills
Position on the landform: Summits and shoulders
Slope: 2 to 15 percent
Adjacent soils: Wellston and Gilpin

Taxonomic classification: Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs

Typical Pedon

Zanesville silt loam, 2 to 6 percent slopes, about 4 miles southwest of Bremen, in Rush Creek Township, Fairfield County, Ohio; about 1,650 feet north and 1,750 feet east of the southwest corner of sec. 31, T. 16 N., R. 17 W.

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium platy structure parting to weak medium and fine subangular blocky; friable; many fine roots; strongly acid; abrupt smooth boundary.
BE—7 to 14 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; common fine roots; common distinct brown (10YR 4/3) organic coatings in root and worm channels; strongly acid; gradual wavy boundary.
Bt1—14 to 21 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; firm; few fine roots; many faint yellowish brown (10YR 5/4) clay films on faces of peds; common medium distinct strong brown (7.5YR 4/6) masses of iron accumulation; few medium distinct black (10YR 2/1) masses of iron and manganese accumulation; strongly acid; clear smooth boundary.
Bt2—21 to 28 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; many faint brown (10YR 5/3) clay films on faces of peds; common medium distinct strong brown (7.5YR 4/6) masses of iron accumulation; few medium distinct black (10YR 2/1) masses of iron and manganese accumulation; strongly acid; clear smooth boundary.
Bt3—28 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure parting to strong medium subangular blocky; very firm; few fine roots; many prominent dark gray (10YR 4/1) clay films on faces of peds; common medium distinct gray (10YR 6/1) and dark gray (10YR 4/1) iron depletions in the matrix; many distinct strong brown (7.5YR 4/6) masses of iron accumulation; few fine distinct black (10YR 2/1) masses of iron and manganese oxide accumulation; strongly acid; abrupt smooth boundary.
Btx—34 to 47 inches; yellowish brown (10YR 5/6) silt loam; strong coarse prismatic structure; extremely firm; very few fine roots along cracks; few prominent (10YR 4/1) clay films on faces of peds; few distinct strong brown (7.5YR 4/6) and common medium distinct strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; few medium prominent black (10YR 2/1) masses of iron and manganese oxide accumulation; strongly acid; clear wavy boundary.
2BC—47 to 55 inches; strong brown (7.5YR 5/6) silty clay loam; weak coarse subangular blocky structure; firm; few distinct red (5YR 5/6) clay films on vertical ped faces; few coarse prominent grayish brown (2.5Y 5/2) and few fine prominent gray (10YR 5/1) iron depletions in the matrix; common coarse faint red (5YR 5/6) masses of iron accumulation; 10 percent large hard iron concretions; 5 percent rock fragments, mostly shale; moderately acid; gradual wavy boundary.
2C—55 to 75 inches; brownish yellow (10YR 6/6) silty clay loam; massive; firm; many medium prominent light gray (10YR 7/2) iron depletions in the matrix;

common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation; 10 percent rock fragments, mostly shale and sandstone; slightly acid; abrupt smooth boundary.

2Cr1—75 to 99 inches; brownish yellow (10YR 6/6), soft mudstone; massive; stratified with thin beds of clay shale and coal blossom.

3Cr2—99 to 100 inches; light olive brown (2.5Y 5/4) siltstone.

Range in Characteristics

Thickness of the solum: 35 to 70 inches
Depth to the fragipan: 20 to 34 inches
Depth to the base of the argillic horizon: 35 to 70 inches
Depth to bedrock: 40 to 80 inches
Thickness of the loess mantle: 24 to 48 inches
Content of rock fragments: Ap and Bt horizons—0 to 2 percent; Btx horizon—0 to 15 percent; 2BC and 2C horizons—5 to 50 percent

Ap horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 4
Texture—silt loam

Bt horizon:
Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 6
Texture—silt loam or silty clay loam

Btx horizon:
Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6
Texture—silty clay loam, silt loam, loam, clay loam, sandy clay loam, or fine sandy loam

2BC and 2C horizons:
Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6
Texture—silt loam, loam, silty clay loam, or clay loam or the channery or very channery analogs of these textures

Formation of the Soils

In this section the major factors of soil formation are described and related to the soils in Fairfield County. Also, some of the processes of soil formation are described.

Factors of Soil Formation

Soil is a three-dimensional natural body consisting of mineral and organic material and capable of supporting plant growth. The nature of any soil at a given site is the result of the interaction of many factors and processes. The major factors of soil formation are parent material, climate, plants and animals, relief, and time. Climate and plants and animals have an effect on parent material that is modified by relief over a period of time. Theoretically, if all these factors were identical at different sites, the soils at these sites would be identical. Differences among the soils are caused by variations in one or more of these factors.

Parent Material

Parent material is the raw material acted on by the soil-forming processes. It largely determines soil texture, which, in turn, affects other properties, such as natural soil drainage and permeability. The physical and chemical composition of parent material has an important effect on the kind of soil that forms.

The soils in Fairfield County formed in many different kinds of parent material. Many of the soils formed in material deposited by the glaciers that covered much of the survey area thousands of years ago or by the meltwater from these glaciers. Other soils formed in loess, which is silty windblown material, or in alluvium, which is material recently deposited by streams. In unglaciated areas, the soils formed in material that was either weathered from bedrock in place or moved by gravity. A few soils formed in organic material that resulted from the slow accumulation of plant residue in marshes or ponds over thousands of years.

Till is material that was deposited directly by glacial ice with little or no water action. It typically has particles of various sizes, including sand, silt, clay, and some pebbles, cobblestones, and larger rock fragments. The smaller rock fragments generally are angular. The composition of the till depends on the nature of the area over which the ice passed before the till was deposited. Some of the material was transported great distances by the ice, but most of the till was of local origin. Most of the till in the western and east-central parts of the county was deposited during the latest major glaciation, the Wisconsinan Glaciation. Most of the till in the southeastern parts of the county was deposited during an earlier major glaciation, the Illinoian Glaciation.

The glacial plains in Fairfield County are either ground moraines or end moraines. The soils that formed in these two types of deposits have different properties, reflecting variations in the method and rate of till deposition.

Till deposits on ground moraines generally are massive, compact, and dense. They make up the nearly level and gently undulating till plains in Fairfield County. The soils that formed in this kind of till generally are compact and are slowly or moderately slowly permeable. Bennington, Kokomo, and Pewamo soils typically formed in ground moraine till of Wisconsinan age. Homewood and Jeneva soils formed in ground moraine till of Illinoian age.

Till deposits on end moraines can vary more in texture than those on ground moraines. In some areas they are stratified and tend to be less dense. They make up the moderately rolling bands of ridges that trend in a north-south direction through the central part of the county. The soils that formed in this kind of till generally are less compact and more permeable than the soils on ground moraines. Amanda and Miamian soils typically formed in till of Wisconsinan age on end moraines. Hickory soils and, in some areas, Homewood soils formed in till of Illinoian age on end moraines.

Outwash deposits, laid down by moving water, and lacustrine deposits, laid down in still water, are two general kinds of meltwater deposits. The size of the particles that can be carried suspended in water depends on the speed of the moving water. When the water slows to a given speed, the suspended particles that are larger than a given size will settle in the water.

Water slows wherever a stream loses grade or flows into a body of still water. At that time, the coarser sand and gravel particles settle near the mouth of the stream and the silt and fine clay particles are carried farther into the lake, where they slowly settle.

The soils that formed in outwash deposits are of moderate extent in Fairfield County. They formed in deposits laid down as surging meltwater poured from the glacier, depositing sand and gravel as outwash terraces, deltas, kames, and kame terraces. The meltwater washed away the smaller particles of silt and clay, leaving behind sand and gravel. The soils that formed in outwash generally are permeable. Outwash of both Wisconsinan age and Illinoian age is deposited in Fairfield County.

The amount of natural lime and the proportion of shale, sandstone, limestone, and igneous pebbles in the outwash are determined by the source of the outwash. The Wisconsinan outwash deposits along the major terraces in Fairfield County were derived from limestone-influenced drift. Ockley and Westland soils formed in limy outwash of Wisconsinan age. Some Wisconsinan outwash deposits along terraces in the eastern part of the county were derived from drift that was influenced very little by limestone. Gallman soils typically formed in the more acid Wisconsinan outwash that was significantly influenced by sandstone and was influenced very little by limestone.

The older Illinoian outwash is deposited at higher elevations than the Wisconsinan outwash. The outwash deposits generally have a mantle of loess. The thickness of the loess on the outwash terraces varies inversely with the slope. The nearly level to sloping Alford soils formed in a thick deposit of loess. The sloping Pike soils formed in thinner deposits of loess, partly because of erosion. The sloping to very steep Negley soils formed in sandy or gravelly deposits in areas where the loess mantle is very thin or does not occur.

Soils that formed in lacustrine deposits are of relatively minor extent throughout Fairfield County, although they are locally extensive in places. They formed in deposits laid down in scattered old glacial or post-glacial lakes. Fitchville, Glenford, McGary, Patton, and Sebring soils formed in these silty deposits.

Loess is wind-deposited soil material. Soils that formed in loess are of minor extent throughout Fairfield County, although they are locally extensive in the south-central and southeastern parts. The loess was deposited as the outwash terraces were forming. Strong winds swept across these open, level terraces, picked up silt particles, and later deposited them, commonly on landforms at higher elevations. Alford and Pike soils formed mainly in loess that was deposited on high Illinoian outwash terraces. In the southeastern part of the county, Alford soils also formed in thick deposits of loess deposited over till or residuum. Cincinnati soils formed in thinner deposits of loess and in Illinoian till.

Soils that formed in colluvium and in material weathered from sedimentary rocks are extensive in the south-central and southeastern parts of the county. Generally, coarse grained sandstone weathers to coarse sand or medium sand, the finer grained sandstone or siltstone weathers to material that ranges from fine sand or very fine sand to silt, and shale weathers to clay. The degree of cementation of individual rock fragments affects the content of rock fragments in the soils. Berks soils formed in material weathered from strongly cemented, fine grained sandstone or siltstone of the Logan Formation. These soils generally have a silty fine-earth texture and a high content of channers.

Some areas in the south-central part of the county were glaciated, but the glacier had little or no influence on soil morphology, especially on the steeper slopes. Cruze soils formed in material weathered from interbedded acid shale and siltstone of the Pottsville Formation. Germano soils formed in material weathered from weakly cemented, coarse grained sandstone of the Pottsville Formation. Cedarfalls soils generally formed in material weathered from Blackhand Sandstone of the Cuyahoga Formation.

Recent alluvium is soil material deposited by floodwater along streams. The texture of the soil material varies, depending on the speed of the floodwater, the duration of flooding, and the distance from the streambank. Soils that formed in recent alluvium can be highly stratified. The soil horizons are weakly expressed because the soil-forming processes are interrupted with each new deposition. The source of the alluvium generally is material eroded from other soils farther upstream in the watershed. Medway, Rossburg, and Stonelick soils formed in slightly acid to calcareous recent alluvium derived from soils that formed in limy Wisconsinan till and outwash. Chagrin and Newark soils formed in more acid alluvium derived from soils that formed in colluvium and residuum and in Illinoian till and outwash. Aetna soils formed in recent alluvium over an older dark soil that was buried by the alluvium.

Organic soils formed in decomposed plant material that accumulated under water when ponds were filling with water. Ponds and marshes naturally age as they fill with organic material derived from algae, sedges, rushes, and other water-tolerant plants. The plant residue accumulates because the permanently wet condition of the soils prevents oxidation and slows

decomposition. Freshly exposed organic material commonly has a reddish brown color that rapidly turns black when the material is exposed to the air. Carlisle and Muskego soils and the lower part of Rockmill soils formed in decomposed plant material.

Climate

The climate in Fairfield County has significantly affected the soil-forming processes. Climatic factors, such as precipitation and temperature, have influenced the existing plant and animal communities and the physical and chemical weathering of the parent material.

During the colder glacial epoch, the advancing glaciers spread over the glaciated part of the county and buried the boreal forest and the underlying soils. The cold temperatures in the soil reduced the rate of chemical reactions in the existing soils and in the raw parent material (Yaalon, 1983). Increased frost action, resulting from a periglacial climate, caused frost churning in some soils (Evertt and others, 1970). Strong winds swept across the recently deposited glacial parent material, which was largely devoid of vegetation, and carried away large amounts of silt-sized particles, which were later deposited as loess. When the glacial ice retreated and the climate gradually warmed, deciduous forests eventually succeeded the boreal vegetation. The vegetation of the Cranberry Island area is a relict of this age.

The county currently has a humid, temperate climate, which has persisted for thousands of years. In this climatic environment, physical and chemical weathering of the parent material can occur along with the accumulation of organic matter, the decomposition of minerals, the formation and translocation of clay, the leaching of soluble compounds, and alternating periods of freezing and thawing.

The microclimate in a given area can affect soil formation. Pewamo soils, which are in depressional or low-lying areas, receive runoff from the higher adjacent slopes. The runoff creates a wet microclimate that results in prolonged saturation, the reduction of iron, and a gray subsoil. Sloping soils, such as Amanda soils, formed under a drier microclimate because of runoff. This better external drainage results in better aeration, the oxidation of iron, and a yellowish brown subsoil. Through its effect on the amount of sunlight and heat energy reaching the soil, the trees that grow on the soil, and the accumulation of organic matter in the soil, aspect also affects the microclimate.

Living Organisms

The vegetation under which a soil forms influences soil properties, such as color, structure, reaction, and content and distribution of organic matter. Vegetation extracts water from the soil, recycles nutrients, and adds organic matter to the soil. Gases derived from root respiration combine with water to form acids that influence the weathering of minerals. Because of a lower content of organic matter, soils that formed under forest vegetation are generally lighter colored than those that formed under grasses.

At the time Fairfield County was settled, the native vegetation consisted mainly of hardwood forests. Red oak, white oak, sugar maple, and American beech commonly grew on the better drained soils on the Wisconsinan till plains. Pin oak, shagbark hickory, red maple, American elm, and white ash were common on the wetter soils on these till plains. White oak, red oak, hickory, and dogwood were common on the Illinoian till plains and in unglaciated areas. Water-tolerant reeds and sedges, willow, tamarack, and alder grew in scattered small fens or marshes.

Bacteria, fungi, and many other micro-organisms decompose organic material and release nutrients to growing plants. They influence the formation of peds. Soil properties, such as drainage, temperature, and reaction, influence the type of micro-organisms that live in the soil. Fungi are generally more active in the more acid soils, while bacteria are more active in the less acid soils.

Earthworms, insects, and small burrowing animals mix the soil and create small channels that influence soil aeration and the percolation of water. Earthworms help to incorporate crop residue or other organic material into the soil. The organic material improves tilth. In areas that are well populated with earthworms, the leaf litter that accumulates on the soil in the fall is generally incorporated into the soil by the following spring. If the earthworm population is low, part of the leaf fall can remain on the surface of the soil for several years.

Human activities have significantly influenced soil formation. Native forests have been cleared and developed for farming and other uses. Cultivation has accelerated erosion on sloping soils, wet soils have been drained, and manure, lime, chemical fertilizer, and pesticides have been applied in cultivated areas. Cultivation has affected soil structure and compaction and lowered the content of organic matter. The development of land for urban uses or for mining has significantly influenced the soils in some areas.

Relief

Relief influences soil formation mainly through its effect on runoff and erosion. To a lesser extent, it also influences soil temperature, the plant cover, depth to the water table, and the accumulation and removal of organic matter.

Because it causes differences in external soil drainage, relief can differentiate soils that formed in the same kind of parent material. Water that runs off the more sloping soils can collect in depressions or swales. Amanda and Pewamo soils both formed in loamy till. The gently sloping to steep Amanda soils on knolls and side slopes are well drained. They are in areas where external drainage is good. The nearly level Pewamo soils are very poorly drained. They are in swales or depressions that receive runoff from the higher adjacent soils, such as Amanda soils.

Relief varies greatly in Fairfield County. On the ground moraines in the western part of the county, the soils generally are nearly level to undulating. Relief becomes more pronounced in the central part of the county, where undulating to rolling, dissected end moraines grade to the western edge of the Allegheny Plateau. Relief becomes even more pronounced in the southeastern part of the county, in the unglaciated section of the Allegheny Plateau, where relief from the ridgetops to the flood plains can be about 250 to 300 feet.

Time

The length of time that the parent material has been exposed to soil-forming processes influences the nature of the soil that forms. The youngest soils in Fairfield County, such as Eel, Chagrin, Newark, Shoals, and Stonelick soils, formed in recent alluvium. These soils can be stratified and have weakly expressed horizons because the soil-forming processes are interrupted with each new deposition.

Glaciers advanced over much of the survey area during the Wisconsinan Glaciation and the Illinoian Glaciation, possibly as much as 100,000 years apart. Glacial deposits of Wisconsinan age are geologically young, yet enough time has elapsed for the initially raw parent material to weather into soils that have distinct horizons. In most of the soils, including Amanda, Bennington, and Centerburg soils, carbonates have been leached to a depth of about 3 to 5 feet, clay has been translocated from the A horizon to the B horizon, and organic matter has accumulated in the A horizon.

Glacial deposits of Illinoian age are significantly older than those of Wisconsinan age. The soils that formed in Illinoian drift, such as Cincinnati, Homewood, and Jeneva soils, typically are more highly weathered or leached than the soils that formed in Wisconsinan till. Also, they have a thicker solum.

The residuum and some of the colluvium associated with the Allegheny area are among the oldest of the parent materials in the county. Soils that formed in these parent materials have weakly expressed to well expressed horizons, depending on the nature of the parent material. Berks soils formed in residuum derived from resistant siltstone or fine grained sandstone. They have weakly expressed horizons. Cruze soils formed in colluvium and residuum derived from softer shale and siltstone. They have well expressed horizons.

Processes of Soil Formation

Soil forms through complex processes that are grouped into four general categories. These are additions, removals, transfers, and transformations. These processes affect soil formation, although in differing degrees.

The accumulation of organic matter in the A horizon of the mineral soils in Fairfield County is an example of an addition. This accumulation is the main reason for the dark color of the A horizon. The color of the raw parent material is uniform with increasing depth.

The leaching of lime from the upper 2 to 4 feet in many of the soils in Fairfield County that formed in till is an example of a removal. The parent material of these soils was initially limy, but the lime has been leached from the upper part of the profile by percolating water.

The translocation of clay from the A horizon to the B horizon in many soils on uplands in the county is an example of a transfer. The A horizon or an E horizon is a zone of eluviation, or loss. The B horizon is a zone of illuviation, or gain. In Bennington, Centerburg, and other soils, the B horizon has more clay than the parent material and the A horizon has less clay. In the B horizon of some soils, thin clay films are in pores and on the faces of peds. This clay has been transferred from the A horizon.

An example of a transformation is the reduction and solubilization of ferrous iron. This process takes place under wet, saturated conditions in which there is no molecular oxygen. Gleying, or the reduction of iron, is evident in Condit, Kokomo, and Pewamo soils, which have a dominantly gray subsoil. The gray color

indicates the presence of reduced ferrous iron, which, in turn, implies wetness (fig. 26). Reduced iron is soluble, but it commonly has been moved short distances in the soils in Fairfield County, stopping either in the horizon where it originated or in an underlying horizon. Part of this iron can be reoxidized and segregated in the form of stains, concretions, or bright yellow and red mottles.

Figure 26.—The mottling of colors as shown in this illustration is common in soils that are subject to seasonal wetness.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp. A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Beach ridge. A low, essentially continuous mound of beach or beach and dune material heaped up by the action of waves and currents on the backshore of a beach, beyond the present limit of storm waves, and occurring singly or as one of a series of approximately parallel deposits. These ridges define the limits of relict lakes.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Beta horizon. A special type of lower Bt horizon with a significant accumulation of translocated silicate clay between two contrasting parent materials.

Borrow pit. An open excavation from which soil and underlying material have been removed, usually for construction purposes. Typically less than 2 acres in size. Larger areas are mapped as Udorthents.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Bulk density. The mass of a dry soil per unit bulk volume. The bulk volume is determined before drying to a constant weight at 105 degrees C. The value is expressed in grams per cubic centimeter.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Cement rock. Shaly limestone used in the manufacture of cement.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Clayey. Containing more than 35 percent clay.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Closed depression. A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and is without a natural outlet for surface drainage.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Compaction. Any process by which the mineral grains of soil are rearranged to decrease void space and bring them into closer contact with one another, thereby increasing the weight of solid material per cubic foot. In agronomy, usually associated with machinery traffic across the soil during farming operations.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour. An imaginary line on the surface of the earth connecting points of the same elevation.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to

improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropland. Land used primarily for the production of adapted cultivated, close-growing crops, fruit, or nut crops for harvest, alone or in association with sod crops.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense material. A very firm, massive, noncemented, root-restrictive layer (commonly till) that has no cracks or in which the spacing of cracks that roots can enter is 10 centimeters or more. The materials within the survey area have a bulk density of more than 1.8 grams per cubic centimeter.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Depth to bedrock (in tables). Bedrock is too near the surface for the specified use.

Depth to dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth to discontinuity (in tables). The soil is limited by the depth to strongly contrasting textural stratification.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Dolostone. A term used for the sedimentary rock dolomite in order to avoid confusion with the mineral of the same name. A carbonate sedimentary rock consisting mostly (more than 50 percent by weight) of the mineral dolomite [$CaMg(CO_3)_2$].

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw. A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

Drift. Pulverized and other rock material transported

by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Effervescence. The gaseous response (observed as bubbles) of soil to applied hydrochloric acid (HCl) or other chemicals. A field or laboratory test to determine the presence of carbonates in the soil.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

End moraine. A moraine produced at the front of an actively flowing glacier at any given time.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff, generally produced by erosion or faulting, breaking the general continuity of more gently sloping land surfaces. Exposed nonbedrock material is nonsoil material or very shallow, poorly developed soil. Typically 0.1 acre to 2 acres in size. Synonym: scarp.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Filtering capacity (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Fine textured soil. Sandy clay, silty clay, or clay.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Footslope. The geomorphic component that forms the inner, gently inclined surface at the base of a hillslope. The surface profile is dominantly concave. In terms of gradational processes, the

footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravel pit. An open excavation from which soil and the loose underlying material have been removed and used as a source of sand or gravel, usually for construction purposes.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Gravelly spot. An area in which the surface layer has more than 35 percent, by volume, rock fragments (mostly less than 3 inches in diameter) in an area of surrounding soil that has less than 15 percent rock fragments.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground moraine. An extensive, fairly even layer of till that has an uneven, undulating surface; a deposit of rock and mineral debris dragged along, in, on, and beneath a glacier and emplaced by processes including basal lodgment and release from downwasting stagnant ice by ablation.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head out. To form a flower head.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as

much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it

receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. An irregular, short ridge or hill of stratified drift.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Landfill. An area where waste products of human habitation are disposed. These products can be above or below natural ground level.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Limestone. A sedimentary rock composed of calcium carbonate. There are many impure varieties.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Lithic contact. A boundary between soil and continuous, coherent underlying material. The underlying material must be sufficiently coherent to make hand digging with a spade impractical.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Longshore bar. A narrow, elongate, coarse textured ridge that once rose near to, or barely above, a pluvial or glacial lake and extended generally parallel to the shore but was separated from it by an intervening trough or lagoon; both the bar and lagoon are now relict features.

Low strength. The soil is not strong enough to support loads.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Marsh. A water-saturated, very poorly drained area, intermittently or permanently covered by water. Marsh areas dominantly support sedges, cattails, and rushes. Not used in map units where poorly

drained or very poorly drained soils are the named components. Typically 0.5 acre to 2 acres in size.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Mulch. Any material, such as straw, sawdust, leaves, plastic film, or loose soil, that is spread upon the surface of the soil to protect the soil and plant roots from the effects of raindrops, soil crusting, freezing, and evaporation.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

No-till farming. A method of planting crops that involves no seedbed preparation other than opening the soil for the purpose of placing the seed at the intended depth, which typically involves opening a small slit or punching a hole into the soil. There is usually no cultivation during crop production. Chemical weed control is normally used.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Outwash plain. A landform of mainly sandy or coarse

textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Paralithic contact. Similar to a lithic contact, except that the underlying material is softer and can be dug with difficulty with a spade.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Pebbles. Rounded or partially rounded rock or mineral fragments between 2 and 75 millimeters in diameter.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Perennial water. A natural or manmade lake, pool, pit, or stream course that contains water for most of the year.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Quarry. An open excavation from which bedrock has been removed.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Restricted permeability (in tables). The slow movement of water through the soil adversely affects the specified use.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Rise. A geomorphic component of flat plains (e.g., lake plain, low coastal plain, low-gradient till plain) consisting of a slightly elevated but low, broad area with slow slope gradients (i.e., slopes of 1 to 3 percent); typically a microfeature but can be fairly extensive. Commonly, soils on a rise are better drained than those in the surrounding flat area.

Riser. The sloping surface of a series of natural steplike landforms, as those of successive stream terraces.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop. Exposures of base bedrock, typically hard rock, at the surface of the earth.

Root zone. The part of the soil that can be penetrated by plant roots.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate,

formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Short steep slope. A narrow area in which the soil has slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 2 percent
Gently sloping	2 to 6 percent
Strongly sloping	6 to 12 percent
Moderately steep	12 to 20 percent
Steep	20 to 35 percent
Very steep	35 percent and higher

Classes for complex slopes are as follows:

Nearly level	0 to 2 percent
Undulating	2 to 6 percent and 0 to 4 percent
Rolling	6 to 15 percent and 6 to 12 percent
Hilly	12 to 20 percent
Steep	20 to 35 percent
Very steep	35 percent and higher

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has

properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsidence. The loss in volume that occurs in muck soils when they oxidize or dry.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Swamp. An area that is saturated with water throughout much of the year but in which the surface of the soil is generally not deeply submerged. Swamp areas dominantly support trees and shrubs.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion

of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Unsorted, nonstratified drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Till plain. An extensive area of nearly level to undulating soils underlain by till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat or gently sloping surface of natural steplike landforms, commonly one of a series, such as successive stream terraces.

Typical pedon. The site of the pedon described as typical for the series in the survey area.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Water table. The upper surface of ground water, or the level below which the soil is saturated with water.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wet spot. An area of soil that is somewhat poorly drained to very poorly drained and that is at least two drainage classes wetter than the named soils in the surrounding map unit.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1961-90 at Lancaster, Ohio)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	34.4	15.7	25.0	63	-15	2	2.13	1.15	2.99	5	7.4
February---	38.1	18.5	28.3	67	-8	3	2.06	.70	3.17	4	4.0
March------	49.9	28.4	39.1	79	4	38	2.90	1.37	4.23	5	1.5
April------	61.3	37.4	49.4	85	17	119	3.06	1.53	4.39	6	.7
May--------	72.0	47.3	59.7	90	27	316	3.95	2.03	5.63	7	.0
June-------	80.7	56.6	68.7	94	39	555	3.55	1.94	4.97	6	.0
July-------	84.7	60.9	72.8	97	45	701	3.96	1.95	5.71	6	.0
August-----	83.0	58.9	71.0	95	41	648	3.63	1.53	5.41	5	.0
September--	77.3	51.9	64.6	92	32	439	2.70	1.07	4.07	5	.0
October----	65.6	40.1	52.9	84	21	161	2.35	1.20	3.35	5	.0
November---	52.4	32.1	42.2	77	12	42	3.04	1.39	4.46	6	.5
December---	39.6	21.9	30.8	68	-4	7	2.79	1.58	3.86	6	2.0
Yearly:											
Average---	61.6	39.1	50.4	---	---	---	---	---	---	---	---
Extreme---	101	-24	---	98	-15	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,031	36.12	17.44	52.24	66	16.1

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Lancaster, Ohio)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 25	May 6	May 14
2 years in 10 later than--	Apr. 19	May 1	May 10
5 years in 10 later than--	Apr. 8	Apr. 21	May 2
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 21	Oct. 7	Sept. 25
2 years in 10 earlier than--	Oct. 27	Oct. 13	Sept. 29
5 years in 10 earlier than--	Nov. 7	Oct. 24	Oct. 6

Table 3.--Growing Season

(Recorded in the period 1961-90 at Lancaster, Ohio)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	185	161	139
8 years in 10	194	169	145
5 years in 10	212	186	156
2 years in 10	229	202	168
1 year in 10	239	211	174

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AfB	Alford silt loam, 2 to 6 percent slopes	2,163	0.7
AfC2	Alford silt loam, 6 to 12 percent slopes, eroded	1,860	0.6
Ag	Aetna silt loam, occasionally flooded	7,710	2.4
Ah	Aetna silt loam, fan, occasionally flooded	505	0.2
AmB	Amanda silt loam, 2 to 6 percent slopes	6,770	2.1
AmB2	Amanda silt loam, 2 to 6 percent slopes, eroded	11,944	3.7
AmC2	Amanda silt loam, 6 to 12 percent slopes, eroded	21,834	6.7
AmD2	Amanda silt loam, 12 to 20 percent slopes, eroded	5,951	1.8
AmE2	Amanda silt loam, 20 to 35 percent slopes, eroded	2,357	0.7
AoC3	Amanda silty clay loam, 6 to 12 percent slopes, severely eroded	3,668	1.1
AoD3	Amanda silty clay loam, 12 to 20 percent slopes, severely eroded	2,045	0.6
ApB2	Amanda-Loudonville complex, 2 to 6 percent slopes, eroded	265	*
ApC2	Amanda-Loudonville complex, 6 to 12 percent slopes, eroded	1,478	0.5
ApD2	Amanda-Loudonville complex, 12 to 20 percent slopes, eroded	2,427	0.7
ArC2	Amanda-Ockley complex, 6 to 12 percent slopes, eroded	1,221	0.4
ArD2	Amanda-Ockley complex, 12 to 20 percent slopes, eroded	327	0.1
Bb	Beaucoup silty clay loam, occasionally flooded	2,565	0.8
BeA	Bennington silt loam, 0 to 2 percent slopes	23,920	7.4
BeB	Bennington silt loam, 2 to 6 percent slopes	4,642	1.4
BkF	Berks channery silt loam, 40 to 70 percent slopes	624	0.2
CaB	Cardington silt loam, 2 to 6 percent slopes	10,502	3.2
CaB2	Cardington silt loam, 2 to 6 percent slopes, eroded	3,855	1.2
CaC2	Cardington silt loam, 6 to 12 percent slopes, eroded	2,167	0.7
CaD2	Cardington silt loam, 12 to 20 percent slopes, eroded	321	*
Cb	Carlisle muck	216	*
CdF	Cedarfalls-Rock outcrop complex, 40 to 70 percent slopes	1,034	0.3
CeB	Celina silt loam, 2 to 6 percent slopes	4,245	1.3
CfB	Centerburg silt loam, 2 to 6 percent slopes	29,410	9.0
CfB2	Centerburg silt loam, 2 to 6 percent slopes, eroded	12,252	3.8
CfC2	Centerburg silt loam, 6 to 12 percent slopes, eroded	2,884	0.9
Cg	Chagrin silt loam, frequently flooded	625	0.2
CkC2	Cincinnati silt loam, 6 to 12 percent slopes, eroded	3,064	0.9
CmC2	Cincinnati-Wellston complex, 6 to 12 percent slopes, eroded	2,501	0.8
Cn	Condit silt loam	193	*
CoB	Corwin silt loam, 2 to 6 percent slopes	1,378	0.4
CrA	Crosby silt loam, 0 to 2 percent slopes	1,713	0.5
CsA	Canal silt loam, 0 to 2 percent slopes	1,476	0.5
Ee	Eel silt loam, gravelly substratum, occasionally flooded	3,598	1.1
EkA	Eldean silt loam, 0 to 2 percent slopes	12	*
EkB	Eldean silt loam, 2 to 6 percent slopes	61	*
EnC2	Eldean gravelly loam, 6 to 12 percent slopes, eroded	26	*
Eu	Euclid silt loam, rarely flooded	1,147	0.4
FbA	Fitchville silt loam, 0 to 2 percent slopes	1,559	0.5
FhA	Fox loam, 0 to 2 percent slopes	482	0.1
FhB	Fox loam, 2 to 6 percent slopes	592	0.2
FhC2	Fox loam, 6 to 12 percent slopes, eroded	506	0.2
FhD2	Fox loam, 12 to 20 percent slopes, eroded	247	*
FmA	Fox silt loam, 0 to 2 percent slopes	728	0.2
FmB	Fox silt loam, 2 to 6 percent slopes	956	0.3
GaB	Gallman silt loam, loamy substratum, 2 to 6 percent slopes	4,462	1.4
GcD	Germano sandy loam, 15 to 25 percent slopes	305	*
GcE	Germano sandy loam, 25 to 40 percent slopes	6,946	2.1
GdF	Germano-Rock outcrop complex, 40 to 70 percent slopes	3,273	1.0
Gf	Gessie silt loam, occasionally flooded	1,748	0.5
Gg	Gessie silt loam, frequently flooded	1,841	0.6
GkC	Gilpin silt loam, 6 to 15 percent slopes	3,035	0.9
GkD	Gilpin silt loam, 15 to 25 percent slopes	2,521	0.8
GnB	Glenford silt loam, 2 to 6 percent slopes	2,772	0.9
GnC2	Glenford silt loam, 6 to 15 percent slopes, eroded	1,400	0.4
HhC2	Hickory silt loam, 6 to 12 percent slopes, eroded	810	0.2
HkE	Hickory-Germano complex, 20 to 35 percent slopes	583	0.2
HmD2	Hickory-Gilpin complex, 12 to 20 percent slopes, eroded	2,889	0.9

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
HnC2	Homewood silt loam, 6 to 12 percent slopes, eroded	461	0.1
HoD2	Homewood-Gilpin complex, 12 to 20 percent slopes, eroded	5,445	1.7
HoE2	Homewood-Gilpin complex, 20 to 35 percent slopes, eroded	389	0.1
JeB	Jeneva silt loam, 2 to 6 percent slopes	879	0.3
Km	Kokomo silt loam, overwash	1,438	0.4
Ko	Kokomo silty clay loam	2,810	0.9
Lk	Lindside silt loam, occasionally flooded	1,350	0.4
LtC2	Loudonville-Steinsburg complex, 6 to 12 percent slopes, eroded	166	*
LtD2	Loudonville-Steinsburg complex, 12 to 20 percent slopes, eroded	896	0.3
LtE	Loudonville-Steinsburg complex, 20 to 35 percent slopes	1,206	0.4
LtF	Loudonville-Steinsburg complex, 35 to 70 percent slopes	171	*
Ma	Marengo clay loam	14,256	4.4
Mb	Marengo silt loam, overwash	1,785	0.5
McB	McGary silt loam, 2 to 6 percent slopes	759	0.2
Me	Medway silt loam, occasionally flooded	147	*
MkB2	Miamian silt loam, 2 to 6 percent slopes, eroded	3,604	1.1
MkC2	Miamian silt loam, 6 to 12 percent slopes, eroded	1,554	0.5
MmC3	Miamian-Thrifton complex, 6 to 12 percent slopes, severely eroded	615	0.2
MmD3	Miamian-Thrifton complex, 12 to 20 percent slopes, severely eroded	508	0.2
Mo	Montgomery silty clay loam	808	0.2
Mr	Muskego muck	299	*
NaD2	Negley loam, 12 to 20 percent slopes, eroded	757	0.2
NaE	Negley loam, 20 to 35 percent slopes	696	0.2
Ne	Newark silt loam, occasionally flooded	1,879	0.6
OcA	Ockley silt loam, 0 to 2 percent slopes	1,068	0.3
OcB	Ockley silt loam, 2 to 6 percent slopes	1,143	0.4
Pa	Patton silty clay loam	4,735	1.5
Pb	Patton silty clay loam, rarely flooded	4,462	1.4
Pe	Pewamo silty clay loam	9,510	2.9
Ph	Pits, quarry	52	*
PkB	Pike silt loam, 2 to 6 percent slopes	432	0.1
PkC2	Pike silt loam, 6 to 12 percent slopes, eroded	559	0.2
Ro	Rockmill silty clay loam	416	0.1
Rp	Rockmill silty clay loam, occasionally flooded	152	*
Rt	Rossburg silt loam, occasionally flooded	228	*
Sc	Sebring silt loam, rarely flooded	531	0.2
SdD	Shelocta silt loam, 15 to 25 percent slopes	2,536	0.8
SeE	Shelocta-Berks complex, 25 to 40 percent slopes	7,962	2.4
SfD	Shelocta-Cruze complex, 15 to 25 percent slopes	799	0.2
SfE	Shelocta-Cruze complex, 25 to 40 percent slopes	138	*
Sh	Shoals silt loam, occasionally flooded	497	0.2
SkA	Sleeth silt loam, 0 to 2 percent slopes	715	0.2
St	Stonelick sandy loam, occasionally flooded	157	*
TaC2	Tarlton silt loam, 6 to 12 percent slopes, eroded	59	*
ThA	Thackery silt loam, 0 to 2 percent slopes	880	0.3
ThB	Thackery silt loam, 2 to 6 percent slopes	1,045	0.3
Ud	Udorthents, loamy	963	0.3
Uf	Udorthents, loamy, organic substratum	98	*
Ug	Udorthents, sandy	492	0.2
Um	Urban land-Aetna complex, rarely flooded	968	0.3
UoC	Urban land-Amanda complex, 2 to 12 percent slopes	911	0.3
UrB	Urban land-Bennington complex, 0 to 6 percent slopes	1,463	0.4
UtC	Urban land-Cardington complex, 2 to 12 percent slopes	696	0.2
UuB	Urban land-Celina complex, 0 to 6 percent slopes	18	*
UxB	Urban land-Ockley complex, 0 to 6 percent slopes	2,069	0.6
Uy	Urban land-Udorthents complex	1,508	0.5
W	Water	3,174	1.0
WdA	Wea silt loam, 0 to 2 percent slopes	320	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
WeC	Wellston silt loam, 6 to 15 percent slopes	1,453	0.4
WfC	Wellston-Cruze complex, 8 to 15 percent slopes	980	0.3
Wg	Westland silt loam, overwash	355	0.1
Wk	Westland silty clay loam	3,903	1.2
ZnB	Zanesville silt loam, 2 to 6 percent slopes	61	*
ZnC2	Zanesville silt loam, 6 to 15 percent slopes, eroded	360	0.1
	Total	325,357	100.0

* Less than 0.1 percent.

Table 5.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
AfB	Alford silt loam, 2 to 6 percent slopes
Ag	Aetna silt loam, occasionally flooded (where drained)
Ah	Aetna silt loam, fan, occasionally flooded (where drained)
AmB	Amanda silt loam, 2 to 6 percent slopes
AmB2	Amanda silt loam, 2 to 6 percent slopes, eroded
ApB2	Amanda-Loudonville complex, 2 to 6 percent slopes, eroded
Bb	Beaucoup silty clay loam, occasionally flooded (where drained)
BeA	Bennington silt loam, 0 to 2 percent slopes (where drained)
BeB	Bennington silt loam, 2 to 6 percent slopes (where drained)
CaB	Cardington silt loam, 2 to 6 percent slopes
CaB2	Cardington silt loam, 2 to 6 percent slopes, eroded
CeB	Celina silt loam, 2 to 6 percent slopes
CfB	Centerburg silt loam, 2 to 6 percent slopes
CfB2	Centerburg silt loam, 2 to 6 percent slopes, eroded
Cg	Chagrin silt loam, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
Cn	Condit silt loam (where drained)
CoB	Corwin silt loam, 2 to 6 percent slopes
CrA	Crosby silt loam, 0 to 2 percent slopes (where drained)
CsA	Canal silt loam, 0 to 2 percent slopes (where drained)
Ee	Eel silt loam, gravelly substratum, occasionally flooded
EkA	Eldean silt loam, 0 to 2 percent slopes
EkB	Eldean silt loam, 2 to 6 percent slopes
Eu	Euclid silt loam, rarely flooded (where drained)
FbA	Fitchville silt loam, 0 to 2 percent slopes (where drained)
FhA	Fox loam, 0 to 2 percent slopes
FhB	Fox loam, 2 to 6 percent slopes
FmA	Fox silt loam, 0 to 2 percent slopes
FmB	Fox silt loam, 2 to 6 percent slopes
GaB	Gallman silt loam, loamy substratum, 2 to 6 percent slopes
Gf	Gessie silt loam, occasionally flooded
Gg	Gessie silt loam, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
GnB	Glenford silt loam, 2 to 6 percent slopes
JeB	Jeneva silt loam, 2 to 6 percent slopes
Km	Kokomo silt loam, overwash (where drained)
Ko	Kokomo silty clay loam (where drained)
Lk	Lindside silt loam, occasionally flooded
Ma	Marengo clay loam (where drained)
Mb	Marengo silt loam, overwash (where drained)
McB	McGary silt loam, 2 to 6 percent slopes (where drained)
Me	Medway silt loam, occasionally flooded
MkB2	Miamian silt loam, 2 to 6 percent slopes, eroded
Mo	Montgomery silty clay loam (where drained)
Ne	Newark silt loam, occasionally flooded
OcA	Ockley silt loam, 0 to 2 percent slopes
OcB	Ockley silt loam, 2 to 6 percent slopes
Pa	Patton silty clay loam (where drained)
Pb	Patton silty clay loam, rarely flooded (where drained)
Pe	Pewamo silty clay loam (where drained)
PkB	Pike silt loam, 2 to 6 percent slopes
Ro	Rockmill silty clay loam (where drained)
Rp	Rockmill silty clay loam, occasionally flooded (where drained)
Rt	Rossburg silt loam, occasionally flooded
Sc	Sebring silt loam, rarely flooded (where drained)
Sh	Shoals silt loam, occasionally flooded (where drained)
SkA	Sleeth silt loam, 0 to 2 percent slopes (where drained)

Table 5.--Prime Farmland--Continued

Map symbol	Soil name
St	Stonelick sandy loam, occasionally flooded
ThA	Thackery silt loam, 0 to 2 percent slopes
ThB	Thackery silt loam, 2 to 6 percent slopes
WdA	Wea silt loam, 0 to 2 percent slopes
Wg	Westland silt loam, overwash (where drained)
Wk	Westland silty clay loam (where drained)
ZnB	Zanesville silt loam, 2 to 6 percent slopes

Table 6.--Hydric Soils (Major Components)

(This table lists the map units that are made up dominantly of hydric soils. See text for a description of hydric properties)

Map symbol	Map unit name
Bb	Beaucoup silty clay loam, occasionally flooded
Cb	Carlisle muck
Cn	Condit silt loam
Km	Kokomo silt loam, overwash
Ko	Kokomo silty clay loam
Ma	Marengo clay loam
Mb	Marengo silt loam, overwash
Mo	Montgomery silty clay loam
Mr	Muskego muck
Pa	Patton silty clay loam
Pb	Patton silty clay loam, rarely flooded
Pe	Pewamo silty clay loam
Ro	Rockmill silty clay loam
Rp	Rockmill silty clay loam, occasionally flooded
Sc	Sebring silt loam, rarely flooded
Wg	Westland silt loam, overwash
Wk	Westland silty clay loam

Table 7.--Hydric Soils (Minor Components)

(This table lists map units that are dominantly nonhydric soils but that have minor components, or inclusions, that are hydric soils. See text for a description of hydric properties)

Map symbol and map unit name	Hydric component	Landform
Ag:		
Aetna silt loam, occasionally flooded	Patton	depression, glacial lake (relict)
	Beaucoup	depression, flood plain
Ah:		
Aetna silt loam, fan, occasionally flooded	Patton	depression, glacial lake (relict)
	Beaucoup	depression, flood plain
AmB:		
Amanda silt loam, 2 to 6 percent slopes	Marengo	depression, till plain
AmB2:		
Amanda silt loam, 2 to 6 percent slopes, eroded	Marengo	depression, till plain
AmC2:		
Amanda silt loam, 6 to 12 percent slopes, eroded	Marengo	depression, till plain
BeA:		
Bennington silt loam, 0 to 2 percent slopes	Pewamo	depression, till plain
	Marengo	depression, till plain
BeB:		
Bennington silt loam, 2 to 6 percent slopes	Pewamo	depression, till plain
	Marengo	depression, till plain
CaB:		
Cardington silt loam, 2 to 6 percent slopes	Pewamo	depression, till plain
CaB2:		
Cardington silt loam, 2 to 6 percent slopes, eroded	Pewamo	depression, till plain
CaC2:		
Cardington silt loam, 6 to 12 percent slopes, eroded	Pewamo	depression, till plain
CeB:		
Celina silt loam, 2 to 6 percent slopes	Kokomo	depression, till plain
CfB:		
Centerburg silt loam, 2 to 6 percent slopes	Marengo	depression, till plain

Table 7.--Hydric Soils (Minor Components)--Continued

Map symbol and map unit name	Hydric component	Landform
CfB2:		
Centerburg silt loam, 2 to 6 percent slopes, eroded	Marengo	depression, till plain
CfC2:		
Centerburg silt loam, 6 to 12 percent slopes, eroded	Marengo	depression, till plain
Cg:		
Chagrin silt loam, frequently flooded	Beaucoup	depression, flood plain
CoB:		
Corwin silt loam, 2 to 6 percent slopes	Kokomo	depression, till plain
	Marengo	depression, till plain
CrA:		
Crosby silt loam, 0 to 2 percent slopes	Kokomo	depression, till plain
CsA:		
Canal silt loam, 0 to 2 percent slopes	Patton	depression, lake plain
Ee:		
Eel silt loam, gravelly substratum, occasionally flooded	Beaucoup	depression, flood plain
Eu:		
Euclid silt loam, rarely flooded	Beaucoup	depression, flood plain
	Patton	depression, lake plain
FbA:		
Fitchville silt loam, 0 to 2 percent slopes	Patton	depression, lake plain
GaB:		
Gallman silt loam, loamy substratum, 2 to 6 percent slopes	Marengo	depression, till plain
Gf:		
Gessie silt loam, occasionally flooded	Beaucoup	depression, flood plain
Gg:		
Gessie silt loam, frequently flooded	Beaucoup	depression, flood plain
Lk:		
Lindside silt loam, occasionally flooded	Beaucoup	depression, flood plain
McB:		
McGary silt loam, 2 to 6 percent slopes	Montgomery	depression, glacial lake (relict)

Table 7.--Hydric Soils (Minor Components)--Continued

Map symbol and map unit name	Hydric component	Landform
Me:		
Medway silt loam, occasionally flooded	Beaucoup	depression, flood plain
MkB2:		
Miamian silt loam, 2 to 6 percent slopes, eroded	Kokomo	depression, till plain
MkC2:		
Miamian silt loam, 6 to 12 percent slopes, eroded	Kokomo	depression, till plain
Ne:		
Newark silt loam, occasionally flooded	Patton	depression, lake plain
OcA:		
Ockley silt loam, 0 to 2 percent slopes	Westland	depression, outwash terrace
OcB:		
Ockley silt loam, 2 to 6 percent slopes	Westland	depression, outwash terrace
Rt:		
Rossburg silt loam, occasionally flooded	Beaucoup	depression, flood plain
Sh:		
Shoals silt loam, occasionally flooded	Beaucoup	depression, flood plain
SkA:		
Sleeth silt loam, 0 to 2 percent slopes	Westland	depression, outwash terrace
St:		
Stonelick sandy loam, occasionally flooded	Beaucoup	depression, flood plain
ThA:		
Thackery silt loam, 0 to 2 percent slopes	Westland	depression, outwash terrace
ThB:		
Thackery silt loam, 2 to 6 percent slopes	Westland	depression, outwash terrace
Um:		
Urban land-Aetna complex, rarely flooded	Patton	depression, lake plain
	Beaucoup	depression, flood plain
UoC:		
Urban land-Amanda complex, 2 to 12 percent slopes	Marengo	depression, till plain

Table 7.--Hydric Soils (Minor Components)--Continued

Map symbol and map unit name	Hydric component	Landform
UrB:		
Urban land-Bennington complex, 0 to 6 percent slopes	Pewamo	depression, till plain
	Marengo	depression, till plain
UtC:		
Urban land-Cardington complex, 2 to 12 percent slopes	Pewamo	depression, till plain
UuB:		
Urban land-Celina complex, 0 to 6 percent slopes	Kokomo	depression, till plain
UxB:		
Urban land-Ockley complex, 0 to 6 percent slopes	Westland	depression, outwash terrace
WdA:		
Wea silt loam, 0 to 2 percent slopes	Westland	depression, outwash terrace

Table 8.--Cropland Limitations and Hazards

(Only the soils that are suitable for cultivated crops are listed. See text for a description of the limitations and hazards listed in this table)

Map symbol and soil name	Cropland limitations and hazards
AfB:	
Alford	Surface compaction, frost action, surface crusting, erosion hazard
AfC2:	
Alford	Part of the surface layer removed by erosion, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard
Ag:	
Aetna	Occasional flooding, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting
Ah:	
Aetna	Occasional flooding, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting
AmB:	
Amanda	Surface compaction, surface crusting, erosion hazard
AmB2:	
Amanda	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, erosion hazard
AmC2:	
Amanda	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard
AmD2:	
Amanda	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard
AoC3:	
Amanda	Most of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard
ApB2:	
Amanda	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, erosion hazard
Loudonville	Part of the surface layer removed by erosion, surface compaction, depth to bedrock, high potential for ground-water pollution, fair tilth, surface crusting, erosion hazard, limited available water capacity
ApC2:	
Amanda	Part of the surface layer removed by erosion, fair tilth, easily eroded, erosion hazard
Loudonville	Part of the surface layer removed by erosion, surface compaction, depth to bedrock, high potential for ground-water pollution, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity

Table 8.--Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations and hazards
ApD2:	
Amanda	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard
Loudonville	Part of the surface layer removed by erosion, surface compaction, depth to bedrock, high potential for ground-water pollution, fair tilth, easily eroded, erosion hazard, limited available water capacity
ArC2:	
Amanda	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard
Ockley	Part of the surface layer removed by erosion, surface compaction, high potential for ground-water pollution, fair tilth, surface crusting, easily eroded, erosion hazard
ArD2:	
Amanda	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard
Ockley	Part of the surface layer removed by erosion, surface compaction, high potential for ground-water pollution, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity
Bb:	
Beaucoup	Occasional flooding, ponding, surface compaction, moderate potential for ground-water pollution, frost action, fair tilth
BeA:	
Bennington	Seasonal high water table, surface compaction, frost action, surface crusting
BeB:	
Bennington	Seasonal high water table, surface compaction, frost action, surface crusting, erosion hazard
CaB:	
Cardington	Surface compaction, frost action, surface crusting, erosion hazard
CaB2:	
Cardington	Part of the surface layer removed by erosion, surface compaction, frost action, fair tilth, surface crusting, erosion hazard
CaC2:	
Cardington	Part of the surface layer removed by erosion, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard
CaD2:	
Cardington	Part of the surface layer removed by erosion, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard
Cb:	
Carlisle	Ponding, moderate potential for ground-water pollution, excessive acidity, frost action, subsidence of the muck, very high organic matter content, wind erosion
CeB:	
Celina	Surface compaction, frost action, surface crusting, erosion hazard, root-restrictive layer

Table 8.--Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations and hazards
CfB:	
Centerburg	Seasonal high water table, surface compaction, frost action, surface crusting, erosion hazard
CfB2:	
Centerburg	Part of the surface layer removed by erosion, seasonal high water table, surface compaction, frost action, fair tilth, surface crusting, erosion hazard
CfC2:	
Centerburg	Part of the surface layer removed by erosion, seasonal high water table, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard
Cg:	
Chagrin	Frequent flooding, surface compaction, surface crusting
CkC2:	
Cincinnati	Part of the surface layer removed by erosion, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, root-restrictive layer
CmC2:	
Cincinnati	Part of the surface layer removed by erosion, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, root-restrictive layer
Wellston	Part of the surface layer removed by erosion, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard
Cn:	
Condit	Ponding, surface compaction, frost action, surface crusting, restricted permeability
CoB:	
Corwin	Surface compaction, surface crusting, erosion hazard, root-restrictive layer
CrA:	
Crosby	Seasonal high water table, surface compaction, frost action, surface crusting, limited available water capacity, root-restrictive layer
CsA:	
Canal	Seasonal high water table, surface compaction, frost action, surface crusting
Ee:	
Eel	Occasional flooding, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting
EkA:	
Eldean	Surface compaction, high potential for ground-water pollution, surface crusting, limited available water capacity, high clay content
EkB:	
Eldean	Surface compaction, high potential for ground-water pollution, surface crusting, erosion hazard, limited available water capacity
EnC2:	
Eldean	Part of the surface layer removed by erosion, high potential for ground-water pollution, easily eroded, erosion hazard, limited available water capacity, high clay content

Table 8.--Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations and hazards
Eu:	
Euclid	Seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting
FbA:	
Fitchville	Seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting
FhA:	
Fox	High potential for ground-water pollution, limited available water capacity
FhB:	
Fox	High potential for ground-water pollution, erosion hazard, limited available water capacity
FhC2:	
Fox	Part of the surface layer removed by erosion, high potential for ground-water pollution, fair tilth, easily eroded, erosion hazard, limited available water capacity
FhD2:	
Fox	Part of the surface layer removed by erosion, high potential for ground-water pollution, fair tilth, easily eroded, erosion hazard, limited available water capacity
FmA:	
Fox	Surface compaction, high potential for ground-water pollution, surface crusting, limited available water capacity
FmB:	
Fox	Surface compaction, high potential for ground-water pollution, surface crusting, erosion hazard
GaB:	
Gallman	Surface compaction, moderate potential for ground-water pollution surface crusting, erosion hazard
GcD:	
Germano	Depth to bedrock, high potential for ground-water pollution, easily eroded, erosion hazard, wind erosion, limited available water capacity
Gf:	
Gessie	Occasional flooding, surface compaction, surface crusting
Gg:	
Gessie	Frequent flooding, surface compaction, surface crusting
GkC:	
Gilpin	Surface compaction, depth to bedrock, high potential for ground-water pollution, surface crusting, easily eroded, erosion hazard, limited available water capacity
GkD:	
Gilpin	Surface compaction, depth to bedrock, high potential for ground-water pollution, surface crusting, easily eroded, erosion hazard, limited available water capacity
GnB:	
Glenford	Seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting, erosion hazard

Table 8.--Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations and hazards
GnC2:	
Glenford	Part of the surface layer removed by erosion, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, fair tilth, surface crusting, easily eroded, erosion hazard
HhC2:	
Hickory	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard
HmD2:	
Hickory	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard
Gilpin	Part of the surface layer removed by erosion, surface compaction, depth to bedrock, high potential for ground-water pollution, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity
HnC2:	
Homewood	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, root-restrictive layer
HoD2:	
Homewood	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, root-restrictive layer
Gilpin	Part of the surface layer removed by erosion, surface compaction, depth to bedrock, high potential for ground-water pollution, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity
JeB:	
Jeneva	Surface compaction, frost action, surface crusting, erosion hazard
Km:	
Kokomo	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, high clay content
Ko:	
Kokomo	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, fair tilth
Lk:	
Lindside	Occasional flooding, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting
LtC2:	
Loudonville	Part of the surface layer removed by erosion, surface compaction, depth to bedrock, high potential for ground-water pollution, fair tilth, surface crusting, easily eroded, erosion hazard, wind erosion, limited available water capacity
Steinsburg	Part of the surface layer removed by erosion, depth to bedrock, high potential for ground-water pollution, fair tilth, easily eroded, erosion hazard, wind erosion, limited available water capacity

Table 8.--Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations and hazards
LtD2:	
Loudonville	Part of the surface layer removed by erosion, surface compaction, depth to bedrock, high potential for ground-water pollution, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity
Steinsburg	Part of the surface layer removed by erosion, depth to bedrock, high potential for ground-water pollution, easily eroded, erosion hazard, wind erosion, limited available water capacity
Ma:	
Marengo	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, fair tilth
Mb:	
Marengo	Ponding, surface compaction, moderate potential for ground-water pollution, frost action
McB:	
McGary	Seasonal high water table, surface compaction, frost action, surface crusting, erosion hazard, restricted permeability, high clay content
Me:	
Medway	Occasional flooding, surface compaction, moderate potential for ground-water pollution, frost action
MkB2:	
Miamian	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, erosion hazard, limited available water capacity, root-restrictive layer, high clay content
MkC2:	
Miamian	Part of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, root-restrictive layer, high clay content
MmC3:	
Miamian	Most of the surface layer removed by erosion, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, root-restrictive layer
Thrifton	Most of the surface layer removed by erosion, surface compaction, fair tilth, easily eroded, erosion hazard, limited available water capacity, clodding, root-restrictive layer
Mo:	
Montgomery	Ponding, surface compaction, moderate potential for ground-water pollution, poor tilth, frost action, clodding, high clay content
Mr:	
Muskego	Ponding, moderate potential for ground-water pollution, excessive acidity, frost action, subsidence of the muck, very high organic matter content, wind erosion
NaD2:	
Negley	Part of the surface layer removed by erosion, fair tilth, easily eroded, erosion hazard
Ne:	
Newark	Occasional flooding, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting

Table 8.--Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations and hazards
OcA:	
Ockley	Surface compaction, high potential for ground-water pollution, surface crusting
OcB:	
Ockley	Surface compaction, high potential for ground-water pollution, surface crusting, erosion hazard
Pa:	
Patton	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, fair tilth
Pb:	
Patton	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, fair tilth
Pe:	
Pewamo	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, fair tilth, clodding, high clay content
PkB:	
Pike	Surface compaction, frost action, surface crusting, erosion hazard
PkC2:	
Pike	Part of the surface layer removed by erosion, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard
Ro:	
Rockmill	Ponding, surface compaction, moderate potential for ground-water pollution, frost action
Rp:	
Rockmill	Occasional flooding, ponding, surface compaction, moderate potential for ground-water pollution, frost action
Rt:	
Rossburg	Occasional flooding, surface compaction
Sc:	
Sebring	Ponding, surface compaction, moderate potential for ground-water pollution, frost action
SdD:	
Shelocta	Surface compaction, surface crusting, easily eroded, erosion hazard
SfD:	
Shelocta	Easily eroded, erosion hazard
Cruze	Surface compaction, frost action, surface crusting, easily eroded, erosion hazard, high clay content
Sh:	
Shoals	Occasional flooding, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting
SkA:	
Sleeth	Seasonal high water table, surface compaction, high potential for ground-water pollution, frost action, surface crusting

Table 8.--Cropland Limitations and Hazards--Continued

Map symbol and soil name	Cropland limitations and hazards
St:	
Stonelick	Occasional flooding, moderate potential for ground-water pollution, wind erosion
TaC2:	
Tarlton	Part of the surface layer removed by erosion, surface compaction, depth to bedrock, high potential for ground-water pollution, frost action, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, high clay content
ThA:	
Thackery	Surface compaction, high potential for ground-water pollution, frost action, surface crusting
ThB:	
Thackery	Surface compaction, high potential for ground-water pollution, frost action, surface crusting, erosion hazard
WdA:	
Wea	Surface compaction, high potential for ground-water pollution
WeC:	
Wellston	Surface compaction, frost action, surface crusting, easily eroded, erosion hazard
WfC:	
Wellston	Surface compaction, frost action, surface crusting, easily eroded, erosion hazard
Cruze	Surface compaction, frost action, surface crusting, easily eroded, erosion hazard, high clay content
Wg:	
Westland	Ponding, surface compaction, high potential for ground-water pollution, frost action
Wk:	
Westland	Ponding, surface compaction, high potential for ground-water pollution, frost action, fair tilth
ZnB:	
Zanesville	Surface compaction, frost action, surface crusting, erosion hazard, root-restrictive layer
ZnC2:	
Zanesville	Part of the surface layer removed by erosion, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, root-restrictive layer

Table 9.--Crop Yield Index

(This table is based on yields from the years 1992-2000. Only the soils that are suitable for cultivated crops are listed. Estimated yields for soils with a yield index of 100 are: corn--160 bushels; soybeans--49 bushels; and wheat--60 bushels. See text for more information on how this table was developed and instructions on converting yield index numbers to estimated yields. Absence of a yield index indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Corn	Soybeans	Winter wheat
AfB--------------------- Alford	90	86	80
AfC2-------------------- Alford	78	76	70
Ag---------------------- Aetna	88	82	75
Ah---------------------- Aetna	90	82	75
AmB--------------------- Amanda	75	86	67
AmB2-------------------- Amanda	72	82	63
AmC2-------------------- Amanda	69	71	58
AmD2-------------------- Amanda	50	51	47
AoC3-------------------- Amanda	41	45	50
ApB2-------------------- Amanda-Loudonville	70	71	58
ApC2-------------------- Amanda-Loudonville	68	61	58
ApD2-------------------- Amanda-Loudonville	50	51	42
ArC2-------------------- Amanda-Ockley	69	71	67
ArD2-------------------- Amanda-Ockley	50	51	50
Bb---------------------- Beaucoup	94	90	87
BeA--------------------- Bennington	75	73	67
BeB--------------------- Bennington	72	61	70
CaB--------------------- Cardington	76	67	63

Table 9.--Crop Yield Index--Continued

Map symbol and soil name	Corn	Soybeans	Winter wheat
CaB2 Cardington	72	67	63
CaC2 Cardington	69	61	58
CaD2 Cardington	50	51	50
Cb Carlisle	79	88	---
CeB Celina	76	67	63
CfB Centerburg	76	67	63
CfB2 Centerburg	72	61	58
CfC2 Centerburg	69	57	50
Cg Chagrin	81	71	---
CkC2 Cincinnati	66	61	67
CmC2 Cincinnati-Wellston	66	61	67
Cn Condit	69	92	83
CoB Corwin	90	86	90
CrA Crosby	75	82	83
CsA Canal	69	71	67
Ee Eel	81	82	---
EkA Eldean	72	71	70
EkB Eldean	72	71	67
EnC2 Eldean	53	51	58
Eu Euclid	86	73	63
FbA Fitchville	69	71	63

Table 9.--Crop Yield Index--Continued

Map symbol and soil name	Corn	Soybeans	Winter wheat
FhA-------------------- Fox	72	71	70
FhB-------------------- Fox	72	71	70
FhC2------------------- Fox	59	63	63
FhD2------------------- Fox	53	51	57
FmA-------------------- Fox	75	71	70
FmB-------------------- Fox	75	71	70
GaB-------------------- Gallman	86	78	75
GcD-------------------- Germano	53	51	57
Gf--------------------- Gessie	82	76	---
Gg--------------------- Gessie	82	76	---
GkC-------------------- Gilpin	53	51	58
GkD-------------------- Gilpin	50	41	50
GnB-------------------- Glenford	82	71	67
GnC2------------------- Glenford	72	61	67
HhC2------------------- Hickory	66	51	50
HmD2------------------- Hickory-Gilpin	50	47	50
HnC2------------------- Homewood	62	51	75
HoD2------------------- Homewood-Gilpin	50	41	50
JeB-------------------- Jeneva	82	82	83
Km--------------------- Kokomo	94	96	90
Ko--------------------- Kokomo	94	96	90

Table 9.--Crop Yield Index--Continued

Map symbol and soil name	Corn	Soybeans	Winter wheat
Lk: Lindside	84	92	---
LtC2: Loudonville-Steinsburg	56	51	50
LtD2: Loudonville-Steinsburg	44	41	33
Ma: Marengo	97	82	67
Mb: Marengo	94	82	67
McB: McGary	66	71	75
Me: Medway	100	82	---
MkB2: Miamian	72	69	80
MkC2: Miamian	69	61	73
MmC3: Miamian-Thrifton	44	51	47
Mo: Montgomery	82	86	80
Mr: Muskego	50	61	---
NaD2: Negley	59	51	50
Ne: Newark	79	82	---
OcA: Ockley	79	78	73
OcB: Ockley	79	78	73
Pa: Patton	97	98	93
Pb: Patton	94	98	93
Pe: Pewamo	97	86	100
PkB: Pike	86	86	80
PkC2: Pike	75	78	63

Table 9.--Crop Yield Index--Continued

Map symbol and soil name	Corn	Soybeans	Winter wheat
Ro----------------------- Rockmill	88	86	---
Rp----------------------- Rockmill	88	86	---
Rt----------------------- Rossburg	100	86	---
Sc----------------------- Sebring	68	61	---
SdD---------------------- Shelocta	50	51	50
SfD---------------------- Shelocta-Cruze	50	51	50
Sh----------------------- Shoals	78	90	---
SkA---------------------- Sleeth	86	86	80
St----------------------- Stonelick	56	61	---
TaC2--------------------- Tarlton	62	82	75
ThA---------------------- Thackery	81	76	67
ThB---------------------- Thackery	81	76	67
WdA---------------------- Wea	100	86	80
WeC---------------------- Wellston	72	71	67
WfC---------------------- Wellston-Cruze	69	71	67
Wg----------------------- Westland	94	100	93
Wk----------------------- Westland	94	100	93
ZnB---------------------- Zanesville	75	71	67
ZnC2--------------------- Zanesville	62	61	58

Table 10.--Capability Classes and Subclasses

(Miscellaneous areas are excluded. Absence of an entry indicates no acreage)

Class	Total acreage	Major management concerns (subclass)		
		Erosion (e)	Wetness (w)	Soil problem (s)
		Acres	Acres	Acres
1	2,268	---	---	---
2	201,289	103,433	96,634	1,222
3	51,453	49,137	2,316	---
4	30,003	29,704	299	---
5	---	---	---	---
6	22,830	22,830	---	---
7	5,102	4,068	---	1,034
8	---	---	---	---

Table 11.--Pasture and Hayland Suitability Group and Yields per Acre of Pasture and Hay

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil. See text for descriptions of the pasture and hayland suitability groups listed in this table)

Map symbol and soil name	Pasture and hayland suitability group	Kentucky bluegrass	Tall fescue	Orchardgrass-alfalfa hay	Orchardgrass-red clover hay
		AUM*	AUM*	Tons	Tons
AfB		3.6	6.0	4.6	4.3
Alford	A-6				
AfC2		3.6	5.6	4.0	3.8
Alford	A-6				
Ag		3.6	5.6	6.5	4.8
Aetna	C-3				
Ah		3.6	5.6	6.5	4.8
Aetna	C-3				
AmB		3.6	5.6	5.0	4.5
Amanda	A-1				
AmB2		3.6	5.6	5.0	4.5
Amanda	A-1				
AmC2		3.6	5.6	5.0	4.5
Amanda	A-1				
AmD2		3.2	5.1	4.0	3.8
Amanda	A-1				
AmE2		2.5	4.0	---	---
Amanda	A-3				
AoC3		3.0	3.0	3.2	3.6
Amanda	A-1				
AoD3		2.5	2.5	3.0	2.8
Amanda	A-1				
ApB2		3.6	5.6	4.8	4.3
Amanda	A-1				
Loudonville	F-1				
ApC2		3.2	5.0	4.5	4.0
Amanda	A-1				
Loudonville	F-1				
ApD2		3.2	5.1	4.0	3.7
Amanda	A-1				
Loudonville	F-1				
ArC2		3.6	5.6	4.5	4.3
Amanda	A-1				
Ockley	A-1				
ArD2		3.2	5.2	4.0	3.8
Amanda	A-1				
Ockley	A-1				

See footnote at end of table.

Table 11.--Pasture and Hayland Suitability Group and Yields per Acre of Pasture and Hay--Continued

Map symbol and soil name	Pasture and hayland suitability group	Kentucky bluegrass	Tall fescue	Orchardgrass-alfalfa hay	Orchardgrass-red clover hay
		AUM*	AUM*	Tons	Tons
Bb-------------------		4.0	6.0	4.0	4.0
Beaucoup------------	C-3				
BeA------------------		4.3	6.2	3.4	5.4
Bennington----------	C-1				
BeB------------------		4.5	6.8	3.6	5.6
Bennington----------	C-1				
BkF------------------		---	---	---	---
Berks---------------	H-1				
CaB------------------		3.6	5.6	3.7	4.5
Cardington----------	A-6				
CaB2-----------------		3.6	5.6	3.7	4.5
Cardington----------	A-6				
CaC2-----------------		3.2	5.2	3.4	4.0
Cardington----------	A-6				
CaD2-----------------		3.0	4.5	3.2	3.8
Cardington----------	A-6				
Cb-------------------		---	---	---	---
Carlisle------------	D-1				
CdF:					
Cedarfalls----------	H-1	---	---	---	---
Rock outcrop.					
CeB------------------		3.6	5.6	3.7	4.5
Celina--------------	A-6				
CfB------------------		3.6	5.6	3.7	4.5
Centerburg----------	A-6				
CfB2-----------------		3.6	5.6	3.7	4.5
Centerburg----------	A-6				
CfC2-----------------		3.0	5.0	3.2	4.2
Centerburg----------	A-6				
Cg-------------------		3.2	5.4	4.5	4.3
Chagrin-------------	A-5				
CkC2-----------------		3.0	4.5	4.2	4.5
Cincinnati----------	F-3				
CmC2-----------------		3.0	4.5	4.2	4.5
Cincinnati----------	F-3				
Wellston------------	A-6				
Cn-------------------		4.1	6.0	4.4	5.2
Condit--------------	C-1				
CoB------------------		3.6	6.0	5.0	4.5
Corwin--------------	A-1				

See footnote at end of table.

Table 11.--Pasture and Hayland Suitability Group and Yields per Acre of Pasture and Hay--Continued

Map symbol and soil name	Pasture and hayland suitability group	Kentucky bluegrass	Tall fescue	Orchardgrass-alfalfa hay	Orchardgrass-red clover hay
		AUM*	AUM*	Tons	Tons
CrA		4.3	6.3	3.4	5.4
Crosby	C-1				
CsA		4.0	6.0	3.2	4.8
Canal	C-1				
Ee		4.0	7.6	3.8	4.0
Eel	A-5				
EkA		4.0	5.6	4.5	4.0
Eldean	B-1				
EkB		4.0	5.6	4.5	4.0
Eldean	B-1				
EnC2		3.5	5.3	3.8	3.8
Eldean	B-1				
Eu		4.0	6.0	3.2	4.3
Euclid	C-1				
FbA		4.3	6.0	3.2	4.3
Fitchville	C-1				
FhA		3.6	5.6	5.7	4.3
Fox	A-1				
FhB		3.6	5.6	5.7	4.3
Fox	A-1				
FhC2		3.2	5.4	5.1	4.1
Fox	A-1				
FhD2		2.8	4.5	4.5	4.0
Fox	A-1				
FmA		3.6	5.6	5.7	4.3
Fox	A-1				
FmB		3.6	5.6	5.7	4.3
Fox	A-1				
GaB		3.6	5.2	5.4	4.5
Gallman	A-1				
GcD		3.2	5.0	4.1	3.0
Germano	F-1				
GcE		2.5	3.5	---	---
Germano	F-2				
GdF:					
Germano	H-1	---	---	---	---
Rock outcrop.					
Gf		3.1	8.0	3.5	4.3
Gessie	A-5				

See footnote at end of table.

Table 11.--Pasture and Hayland Suitability Group and Yields per Acre of Pasture and Hay--Continued

Map symbol and soil name	Pasture and hayland suitability group	Kentucky bluegrass	Tall fescue	Orchardgrass-alfalfa hay	Orchardgrass-red clover hay
		AUM*	AUM*	Tons	Tons
Gg		3.1	8.0	3.5	4.3
Gessie	A-5				
GkC		3.0	5.0	4.9	4.6
Gilpin	F-1				
GkD		3.0	4.5	4.2	4.0
Gilpin	F-1				
GnB		3.6	5.6	4.5	4.2
Glenford	A-6				
GnC2		3.3	5.0	4.0	4.2
Glenford	A-6				
HhC2		3.6	5.6	2.9	4.3
Hickory	A-1				
HkE		2.4	4.0	---	---
Hickory	A-3				
Germano	B-2				
HmD2		3.6	5.6	2.6	4.3
Hickory	A-1				
Gilpin	F-1				
HnC2		3.0	5.6	3.5	4.0
Homewood	F-3				
HoD2		3.0	4.5	4.2	4.0
Homewood	F-3				
Gilpin	F-1				
HoE2		2.5	3.0	2.0	2.5
Homewood	F-4				
Gilpin	F-2				
JeB		4.0	5.0	4.3	4.5
Jeneva	A-6				
Km		4.1	6.2	4.4	5.2
Kokomo	C-1				
Ko		4.1	6.2	4.4	5.2
Kokomo	C-1				
Lk		5.5	6.5	4.5	3.5
Lindside	A-5				
LtC2		3.0	5.0	3.5	3.5
Loudonville	F-1				
Steinsburg	F-1				
LtD2		2.6	4.0	3.0	3.0
Loudonville	F-1				
Steinsburg	B-1				

See footnote at end of table.

Table 11.--Pasture and Hayland Suitability Group and Yields per Acre of Pasture and Hay--Continued

Map symbol and soil name	Pasture and hayland suitability group	Kentucky bluegrass	Tall fescue	Orchardgrass-alfalfa hay	Orchardgrass-red clover hay
		AUM*	AUM*	Tons	Tons
LtE		3.0	3.5	3.8	3.5
Loudonville	F-2				
Steinsburg	F-2				
LtF		---	---	---	---
Loudonville	H-1				
Steinsburg	H-1				
Ma		4.0	6.2	3.0	4.8
Marengo	C-1				
Mb		4.0	6.0	3.0	4.8
Marengo	C-1				
McB		4.0	6.6	3.3	4.4
McGary	C-2				
Me		5.5	7.0	5.5	5.8
Medway	A-5				
MkB2		3.4	5.4	4.3	4.2
Miamian	A-1				
MkC2		3.0	5.0	4.0	3.9
Miamian	A-1				
MmC3		2.5	4.0	3.0	3.0
Miamian	A-1				
Thrifton	B-1				
MmD3		2.2	3.0	2.5	2.5
Miamian	A-1				
Thrifton	A-1				
Mo		4.5	7.0	4.0	4.5
Montgomery	C-2				
Mr		2.0	2.0	2.0	2.0
Muskego	D-1				
NaD2		4.0	6.0	3.8	3.4
Negley	A-1				
NaE		4.0	5.5	3.8	4.0
Negley	A-3				
Ne		3.5	5.5	4.0	4.5
Newark	C-3				
OcA		4.2	7.2	3.6	4.0
Ockley	A-1				
OcB		4.2	7.2	3.6	4.0
Ockley	A-1				
Pa		4.3	6.3	4.0	5.6
Patton	C-1				

See footnote at end of table.

Table 11.--Pasture and Hayland Suitability Group and Yields per Acre of Pasture and Hay--Continued

Map symbol and soil name	Pasture and hayland suitability group	Kentucky bluegrass	Tall fescue	Orchardgrass-alfalfa hay	Orchardgrass-red clover hay
		AUM*	AUM*	Tons	Tons
Pb		4.3	6.3	4.0	5.6
Patton	C-1				
Pe		5.0	6.0	4.0	5.6
Pewamo	C-1				
Ph.					
Pits					
PkB		3.6	8.0	4.0	4.4
Pike	A-6				
PkC2		3.6	8.0	4.0	4.4
Pike	A-6				
Ro		3.6	6.3	4.0	4.4
Rockmill	C-1				
Rp		3.6	6.3	4.0	4.4
Rockmill	C-3				
Rt		4.0	5.6	4.5	4.8
Rossburg	A-5				
Sc		5.3	6.7	3.2	4.0
Sebring	C-1				
SdD		3.2	5.0	4.0	4.4
Shelocta	A-2				
SeE		2.5	3.0	---	---
Shelocta	A-3				
Berks	F-2				
SfD		4.2	5.0	4.0	4.4
Shelocta	A-2				
Cruze	A-2				
SfE		3.5	4.0	---	---
Shelocta	A-3				
Cruze	A-3				
Sh		5.6	8.2	4.1	4.6
Shoals	C-3				
SkA		5.6	8.0	3.8	4.0
Sleeth	C-1				
St		4.2	5.6	3.5	4.0
Stonelick	A-5				
TaC2		3.6	5.6	4.0	4.4
Tarlton	F-1				
ThA		5.6	7.0	3.5	4.0
Thackery	A-6				
ThB		5.6	7.0	4.5	4.0
Thackery	A-6				

See footnote at end of table.

Table 11.--Pasture and Hayland Suitability Group and Yields per Acre of Pasture and Hay--Continued

Map symbol and soil name	Pasture and hayland suitability group	Kentucky bluegrass	Tall fescue	Orchardgrass-alfalfa hay	Orchardgrass-red clover hay
		AUM*	AUM*	Tons	Tons
Ud, Uf, Ug. Udorthents					
Um. Urban land-Aetna					
UoC. Urban land-Amanda					
UrB. Urban land-Bennington					
UtC. Urban land-Cardington					
UuB. Urban land-Celina					
UxB. Urban land-Ockley					
Uy. Urban land-Udorthents					
WdA		5.6	8.0	4.0	4.8
Wea	A-1				
WeC		5.0	6.0	5.0	4.5
Wellston	A-6				
WfC		5.5	6.0	4.5	4.5
Wellston	A-6				
Cruze	A-6				
Wg		5.6	8.0	4.6	5.2
Westland	C-1				
Wk		5.6	8.0	4.6	5.2
Westland	C-1				
ZnB		5.0	6.0	3.2	3.5
Zanesville	F-3				
ZnC2		5.0	6.0	3.2	3.5
Zanesville	F-3				

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 12.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
AfB:					
Alford	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
AfC2:					
Alford	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Ag:					
Aetna	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Ah:					
Aetna	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
AmB:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
AmB2:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
AmC2:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
AmD2:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
AmE2:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
AoC3:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
AoD3:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
ApB2:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Loudonville	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
ApC2:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Loudonville	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
ApD2:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Loudonville	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
ArC2:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Ockley	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
ArD2:					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Ockley	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
Bb:					
Beaucoup	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak
BeA:					
Bennington	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
BeB:					
Bennington	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
BkF:					
Berks	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
CaB:					
Cardington	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
CaB2:					
Cardington	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
CaC2:					
Cardington	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
CaD2:					
Cardington	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Cb:					
Carlisle	Common ninebark, sargent crabapple, silky dogwood	American cranberrybush, common lilac, southern arrowwood	Black Hills spruce, nannyberry	Eastern white pine, green ash, Norway spruce	Imperial Carolina poplar
CdF:					
Cedarfalls	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
Rock outcrop.					
CeB:					
Celina	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
CfB:					
Centerburg	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
CfB2:					
Centerburg	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
CfC2:					
Centerburg	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Cg:					
Chagrin	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
CkC2:					
Cincinnati	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
CmC2:					
Cincinnati	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
Wellston	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Cn:					
Condit	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
CoB:					
Corwin	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
CrA:					
Crosby	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
CsA:					
Canal	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
Ee:					
Eel	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
EkA:					
Eldean	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
EkB:					
Eldean	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
EnC2:					
Eldean	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
Eu: Euclid	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
FbA: Fitchville	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
FhA: Fox	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
FhB: Fox	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
FhC2: Fox	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
FhD2: Fox	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
FmA: Fox	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
FmB: Fox	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
GaB:					
Gallman	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
GcD:					
Germano	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine, Virginia pine	---	---
GcE:					
Germano	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine, Virginia pine	---	---
GdF:					
Germano	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine, Virginia pine	---	---
Rock outcrop.					
Gf:					
Gessie	Nannyberry	Siberian peashrub	Eastern redcedar, green ash, northern whitecedar, Osageorange, Washington hawthorn, white spruce	Black willow	Eastern cottonwood
Gg:					
Gessie	Nannyberry	Siberian peashrub	Eastern redcedar, green ash, northern whitecedar, Osageorange, Washington hawthorn, white spruce	Black willow	Eastern cottonwood

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
GkC:					
Gilpin	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
GkD:					
Gilpin	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
GnB:					
Glenford	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
GnC2:					
Glenford	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
HhC2:					
Hickory	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
HkE:					
Hickory	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Germano	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine, Virginia pine	---	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
HmD2:					
Hickory	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Gilpin	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
HnC2:					
Homewood	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
HoD2:					
Homewood	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
Gilpin	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
HoE2:					
Homewood	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
Gilpin	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
JeB:					
Jeneva	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
Km:					
Kokomo	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak
Ko:					
Kokomo	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak
Lk:					
Lindside	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
LtC2:					
Loudonville	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Steinsburg	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
LtD2:					
Loudonville	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Steinsburg	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
LtE:					
Loudonville	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Steinsburg	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
LtF:					
Loudonville	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
Steinsburg	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
Ma:					
Marengo	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak
Mb:					
Marengo	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak
McB:					
McGary	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
Me:					
Medway	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
MkB2:					
Miamian	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
MkC2:					
Miamian	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
MmC3:					
Miamian	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Thrifton	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
MmD3:					
Miamian	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Thrifton	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Mo:					
Montgomery	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
Mr:					
Muskego	Common ninebark, silky dogwood, whitebelle honeysuckle	Nannyberry	Tall purple willow	Black willow, golden willow	Imperial Carolina poplar
NaD2:					
Negley	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
NaE:					
Negley	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Ne:					
Newark	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
OcA:					
Ockley	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
OcB:					
Ockley	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
Pa:					
Patton	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak
Pb:					
Patton	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak
Pe:					
Pewamo	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak
Ph.					
Pits					
PkB:					
Pike	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
PkC2:					
Pike	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Ro:					
Rockmill	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
Rp:					
Rockmill	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak
Rt:					
Rossburg	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Sc:					
Sebring	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak
SdD:					
Shelocta	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
SeE:					
Shelocta	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Berks	Common lilac, Siberian peashrub	Eastern redcedar, radiant crabapple, Washington hawthorn	Austrian pine, eastern white pine, jack pine, red pine	---	---
SfD:					
Shelocta	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
SfD:					
Cruze------------------	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
SfE:					
Shelocta----------------	Silky dogwood-------	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Cruze------------------	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
Sh:					
Shoals------------------	Silky dogwood-------	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
SkA:					
Sleeth------------------	Silky dogwood-------	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
St:					
Stonelick---------------	---	Siberian peashrub---	Eastern redcedar, green ash, nannyberry, northern whitecedar, Osageorange, Washington hawthorn, white spruce	Black willow--------	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
TaC2:					
Tarlton	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
ThA:					
Thackery	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
ThB:					
Thackery	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Ud, Uf, Ug. Udorthents					
Um:					
Urban land.					
Aetna	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
UoC:					
Urban land.					
Amanda	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
UrB:					
Urban land.					
Bennington	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
UtC:					
Urban land.					
Cardington	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
UuB:					
Urban land.					
Celina	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
UxB:					
Urban land.					
Ockley	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Uy:					
Urban land.					
Udorthents.					

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
WdA:					
Wea	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
WeC:					
Wellston	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
WfC:					
Wellston	Silky dogwood	American cranberrybush	Blue spruce, northern whitecedar, Washington hawthorn, white fir	Austrian pine, Norway spruce	Eastern white pine, pin oak
Cruze	American cranberrybush	Southern arrowwood	Austrian pine, eastern redcedar, green ash, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
Wg:					
Westland	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak
Wk:					
Westland	Silky dogwood	American cranberrybush	Austrian pine, blue spruce, northern whitecedar, Washington hawthorn, white fir	Eastern white pine, Norway spruce	Pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
ZnB:					
Zanesville	American cranberrybush	Southern arrowwood	Austrian pine, common hackberry, eastern redcedar, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---
ZnC2:					
Zanesville	American cranberrybush	Southern arrowwood	Austrian pine, common hackberry, eastern redcedar, Osageorange, Washington hawthorn	Eastern white pine, pin oak	---

Table 13a.--Woodland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Erosion hazard		Seedling mortality		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AfB:						
Alford--------------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
AfC2:						
Alford--------------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
Ag:						
Aetna---------------	Slight		Low		Severe	
	Water erosion	0.02			Low strength	1.00
Ah:						
Aetna---------------	Slight		Low		Severe	
	Water erosion	0.02			Low strength	1.00
AmB:						
Amanda--------------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
AmB2:						
Amanda--------------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
AmC2:						
Amanda--------------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
AmD2:						
Amanda--------------	Moderate		Low		Severe	
	Water erosion	0.39			Low strength	1.00
AmE2:						
Amanda--------------	Severe		Low		Severe	
	Water erosion	0.68			Low strength	1.00
AoC3:						
Amanda--------------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
AoD3:						
Amanda--------------	Moderate		Low		Severe	
	Water erosion	0.39			Low strength	1.00
ApB2:						
Amanda--------------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
Loudonville---------	Slight		Low		Severe	
	Water erosion	0.06			Low strength	1.00

Table 13a.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard		Seedling mortality		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ApC2:						
Amanda--------------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
Loudonville---------	Slight		Low		Severe	
	Water erosion	0.14			Low strength	1.00
ApD2:						
Amanda--------------	Moderate		Low		Severe	
	Water erosion	0.39			Low strength	1.00
Loudonville---------	Moderate		Low		Severe	
	Water erosion	0.24			Low strength	1.00
ArC2:						
Amanda--------------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
Ockley--------------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
ArD2:						
Amanda--------------	Moderate		Low		Severe	
	Water erosion	0.39			Low strength	1.00
Ockley--------------	Moderate		Low		Severe	
	Water erosion	0.39			Low strength	1.00
Bb:						
Beaucoup------------	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
BeA:						
Bennington----------	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
BeB:						
Bennington----------	Slight		High		Severe	
	Water erosion	0.10	Wetness	1.00	Low strength	1.00
BkF:						
Berks---------------	Severe		Low		Severe	
	Water erosion	1.00			Low strength	1.00
CaB:						
Cardington----------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
CaB2:						
Cardington----------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
CaC2:						
Cardington----------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
CaD2:						
Cardington----------	Moderate		Low		Severe	
	Water erosion	0.39			Low strength	1.00

Table 13a.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard: Rating class and limiting features	Value	Seedling mortality: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
Cb:						
Carlisle------------	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
			Soil reaction	1.00		
CdF:						
Cedarfalls----------	Severe		Low		Moderate	
	Water erosion	1.00			Low strength	0.50
Rock outcrop--------	Not rated		Not rated		Not rated	
CeB:						
Celina--------------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
CfB:						
Centerburg----------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
CfB2:						
Centerburg----------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
CfC2:						
Centerburg----------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
Cg:						
Chagrin-------------	Slight		Low		Severe	
	Water erosion	0.01			Low strength	1.00
CkC2:						
Cincinnati----------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
CmC2:						
Cincinnati----------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
Wellston------------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
Cn:						
Condit--------------	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
CoB:						
Corwin--------------	Slight		Low		Severe	
	Water erosion	0.06			Low strength	1.00
CrA:						
Crosby--------------	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
CsA:						
Canal---------------	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
Ee:						
Eel-----------------	Slight		Low		Severe	
	Water erosion	0.01			Low strength	1.00

Table 13a.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard: Rating class and limiting features	Erosion hazard: Value	Seedling mortality: Rating class and limiting features	Seedling mortality: Value	Soil rutting hazard: Rating class and limiting features	Soil rutting hazard: Value
EkA:						
Eldean	Slight		Low		Severe	
	Water erosion	0.02			Low strength	1.00
EkB:						
Eldean	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
EnC2:						
Eldean	Slight		Low		Severe	
	Water erosion	0.14			Low strength	1.00
Eu:						
Euclid	Slight		Low		Severe	
	Water erosion	0.02			Low strength	1.00
FbA:						
Fitchville	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
FhA:						
Fox	Slight		Moderate		Severe	
	Water erosion	0.02	Carbonate content	0.50	Low strength	1.00
FhB:						
Fox	Slight		Moderate		Severe	
	Water erosion	0.10	Carbonate content	0.50	Low strength	1.00
FhC2:						
Fox	Slight		Moderate		Severe	
	Water erosion	0.22	Carbonate content	0.50	Low strength	1.00
FhD2:						
Fox	Moderate		Moderate		Severe	
	Water erosion	0.39	Carbonate content	0.50	Low strength	1.00
FmA:						
Fox	Slight		Low		Severe	
	Water erosion	0.02			Low strength	1.00
FmB:						
Fox	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
GaB:						
Gallman	Slight		Low		Severe	
	Water erosion	0.06			Low strength	1.00
GcD:						
Germano	Moderate		Low		Moderate	
	Water erosion	0.30			Low strength	0.50
GcE:						
Germano	Moderate		Low		Moderate	
	Water erosion	0.47			Low strength	0.50
GdF:						
Germano	Severe		Low		Moderate	
	Water erosion	1.00			Low strength	0.50
Rock outcrop	Not rated		Not rated		Not rated	

Table 13a.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard: Rating class and limiting features	Value	Seedling mortality: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
Gf:						
Gessie	Slight		Moderate		Severe	
	Water erosion	0.02	Carbonate content	0.50	Low strength	1.00
			Soil reaction	0.50		
Gg:						
Gessie	Slight		Moderate		Severe	
	Water erosion	0.02	Carbonate content	0.50	Low strength	1.00
			Soil reaction	0.50		
GkC:						
Gilpin	Slight		Low		Severe	
	Water erosion	0.17			Low strength	1.00
GkD:						
Gilpin	Moderate		Low		Severe	
	Water erosion	0.30			Low strength	1.00
GnB:						
Glenford	Slight		High		Severe	
	Water erosion	0.10	Wetness	1.00	Low strength	1.00
GnC2:						
Glenford	Moderate		High		Severe	
	Water erosion	0.27	Wetness	1.00	Low strength	1.00
HhC2:						
Hickory	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
HkE:						
Hickory	Severe		Low		Severe	
	Water erosion	0.68			Low strength	1.00
Germano	Moderate		Low		Moderate	
	Water erosion	0.41			Low strength	0.50
HmD2:						
Hickory	Moderate		Low		Severe	
	Water erosion	0.39			Low strength	1.00
Gilpin	Moderate		Low		Severe	
	Water erosion	0.24			Low strength	1.00
HnC2:						
Homewood	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
HoD2:						
Homewood	Moderate		Low		Severe	
	Water erosion	0.39			Low strength	1.00
Gilpin	Moderate		Low		Severe	
	Water erosion	0.24			Low strength	1.00
HoE2:						
Homewood	Severe		Low		Severe	
	Water erosion	0.68			Low strength	1.00
Gilpin	Moderate		Low		Severe	
	Water erosion	0.41			Low strength	1.00

Table 13a.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard: Rating class and limiting features	Value	Seedling mortality: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
JeB:						
Jeneva	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
Km:						
Kokomo	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
Ko:						
Kokomo	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
Lk:						
Lindside	Slight		Low		Severe	
	Water erosion	0.01			Low strength	1.00
LtC2:						
Loudonville	Slight		Low		Severe	
	Water erosion	0.14			Low strength	1.00
Steinsburg	Slight		Low		Severe	
	Water erosion	0.14			Low strength	1.00
LtD2:						
Loudonville	Moderate		Low		Severe	
	Water erosion	0.24			Low strength	1.00
Steinsburg	Moderate		Low		Moderate	
	Water erosion	0.24			Low strength	0.50
LtE:						
Loudonville	Moderate		Low		Severe	
	Water erosion	0.41			Low strength	1.00
Steinsburg	Moderate		Low		Moderate	
	Water erosion	0.41			Low strength	0.50
LtF:						
Loudonville	Severe		Low		Severe	
	Water erosion	1.00			Low strength	1.00
Steinsburg	Severe		Low		Moderate	
	Water erosion	1.00			Low strength	0.50
Ma:						
Marengo	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
Mb:						
Marengo	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
McB:						
McGary	Slight		High		Severe	
	Water erosion	0.10	Wetness	1.00	Low strength	1.00
Me:						
Medway	Slight		Moderate		Severe	
	Water erosion	0.01	Wetness	0.50	Low strength	1.00

Table 13a.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard: Rating class and limiting features	Value	Seedling mortality: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
MkB2:						
Miamian-------------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
MkC2:						
Miamian-------------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
MmC3:						
Miamian-------------	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
Thrifton------------	Slight		Moderate		Severe	
	Water erosion	0.14	Carbonate content	0.50	Low strength	1.00
			Soil reaction	0.50		
MmD3:						
Miamian-------------	Moderate		Low		Severe	
	Water erosion	0.39			Low strength	1.00
Thrifton------------	Moderate		Moderate		Severe	
	Water erosion	0.24	Carbonate content	0.50	Low strength	1.00
			Soil reaction	0.50		
Mo:						
Montgomery----------	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
Mr:						
Muskego-------------	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
			Soil reaction	1.00		
NaD2:						
Negley--------------	Moderate		Low		Severe	
	Water erosion	0.24			Low strength	1.00
NaE:						
Negley--------------	Moderate		Low		Severe	
	Water erosion	0.41			Low strength	1.00
Ne:						
Newark--------------	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
OcA:						
Ockley--------------	Slight		Low		Severe	
	Water erosion	0.02			Low strength	1.00
OcB:						
Ockley--------------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
Pa:						
Patton--------------	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
Pb:						
Patton--------------	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00

Table 13a.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard: Rating class and limiting features	Value	Seedling mortality: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
Pe:						
Pewamo	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
Ph:						
Pits	Not rated		Not rated		Not rated	
PkB:						
Pike	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
PkC2:						
Pike	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
Ro:						
Rockmill	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
Rp:						
Rockmill	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
Rt:						
Rossburg	Slight		Low		Severe	
	Water erosion	0.02			Low strength	1.00
Sc:						
Sebring	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
SdD:						
Shelocta	Moderate		Low		Severe	
	Water erosion	0.30			Low strength	1.00
SeE:						
Shelocta	Moderate		Low		Severe	
	Water erosion	0.41			Low strength	1.00
Berks	Moderate		Low		Severe	
	Water erosion	0.47			Low strength	1.00
SfD:						
Shelocta	Moderate		Low		Severe	
	Water erosion	0.30			Low strength	1.00
Cruze	Moderate		Low		Severe	
	Water erosion	0.49			Low strength	1.00
SfE:						
Shelocta	Moderate		Low		Severe	
	Water erosion	0.47			Low strength	1.00
Cruze	Severe		Low		Severe	
	Water erosion	0.80			Low strength	1.00
Sh:						
Shoals	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00

Table 13a.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard: Rating class and limiting features	Value	Seedling mortality: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
SkA:						
Sleeth-------------	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
St:						
Stonelick-----------	Slight		Moderate		Moderate	
	Water erosion	0.01	Carbonate content	0.50	Low strength	0.50
			Soil reaction	0.50		
TaC2:						
Tarlton-------------	Moderate		Low		Severe	
	Water erosion	0.27			Low strength	1.00
ThA:						
Thackery------------	Slight		Low		Severe	
	Water erosion	0.02			Low strength	1.00
ThB:						
Thackery------------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
Ud, Uf, Ug:						
Udorthents----------	Not rated		Not rated		Not rated	
Um:						
Urban land----------	Not rated		Not rated		Not rated	
Aetna---------------	Not rated		Not rated		Not rated	
UoC:						
Urban land----------	Not rated		Not rated		Not rated	
Amanda--------------	Not rated		Not rated		Not rated	
UrB:						
Urban land----------	Not rated		Not rated		Not rated	
Bennington----------	Not rated		Not rated		Not rated	
UtC:						
Urban land----------	Not rated		Not rated		Not rated	
Cardington----------	Not rated		Not rated		Not rated	
UuB:						
Urban land----------	Not rated		Not rated		Not rated	
Celina--------------	Not rated		Not rated		Not rated	
UxB:						
Urban land----------	Not rated		Not rated		Not rated	
Ockley--------------	Not rated		Not rated		Not rated	
Uy:						
Urban land----------	Not rated		Not rated		Not rated	
Udorthents----------	Not rated		Not rated		Not rated	

Table 13a.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard: Rating class and limiting features	Value	Seedling mortality: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
WdA:						
Wea-----------------	Slight		Low		Severe	
	Water erosion	0.01			Low strength	1.00
WeC:						
Wellston------------	Moderate		Low		Severe	
	Water erosion	0.27			Low strength	1.00
WfC:						
Wellston------------	Moderate		Low		Severe	
	Water erosion	0.29			Low strength	1.00
Cruze---------------	Moderate		Low		Severe	
	Water erosion	0.29			Low strength	1.00
Wg:						
Westland------------	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
Wk:						
Westland------------	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
ZnB:						
Zanesville----------	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
ZnC2:						
Zanesville----------	Moderate		Low		Severe	
	Water erosion	0.27			Low strength	1.00

Table 13b.--Woodland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AfB:						
Alford	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
AfC2:						
Alford	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Ag:						
Aetna	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50		
			Depth to saturated zone	0.50		
Ah:						
Aetna	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50		
			Depth to saturated zone	0.50		
AmB:						
Amanda	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
AmB2:						
Amanda	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
AmC2:						
Amanda	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
AmD2:						
Amanda	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
AmE2:						
Amanda	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50	Slope	0.50
AoC3:						
Amanda	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AoD3:						
Amanda	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
ApB2:						
Amanda	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
Loudonville	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
	Depth to bedrock	0.50				
ApC2:						
Amanda	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Loudonville	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
	Depth to bedrock	0.50	Low strength	0.50		
ApD2:						
Amanda	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
Loudonville	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Depth to bedrock	0.50	Low strength	0.50		
	Slope	0.50				
ArC2:						
Amanda	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Ockley	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
ArD2:						
Amanda	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
Ockley	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
Bb:						
Beaucoup	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
	Flooding	0.50	Depth to saturated zone	1.00		
			Flooding	0.50		
			Low strength	0.50		

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value	Harvest equipment operability: Rating class and limiting features	Value
BeA:						
Bennington----------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Depth to saturated zone	0.50	Low strength	0.50
			Low strength	0.50		
BeB:						
Bennington----------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Depth to saturated zone	0.50	Low strength	0.50
			Low strength	0.50		
BkF:						
Berks---------------	Severe		Poorly suited		Poorly suited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Low strength	0.50	Low strength	0.50
CaB:						
Cardington----------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
CaB2:						
Cardington----------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
CaC2:						
Cardington----------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
CaD2:						
Cardington----------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
Cb:						
Carlisle------------	Severe		Poorly suited		Poorly suited	
	Low strength	1.00	Ponding	1.00	Low strength	1.00
			Low strength	1.00		
			Depth to saturated zone	1.00		
CdF:						
Cedarfalls----------	Severe		Poorly suited		Poorly suited	
	Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop--------	Not rated		Not rated		Not rated	
CeB:						
Celina--------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
CfB:						
Centerburg----------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CfB2:						
Centerburg----------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
CfC2:						
Centerburg----------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
Cg:						
Chagrin-------------	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50		
CkC2:						
Cincinnati----------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
CmC2:						
Cincinnati----------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Wellston------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Cn:						
Condit--------------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
CoB:						
Corwin--------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
CrA:						
Crosby--------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Depth to saturated zone	0.50	Low strength	0.50
			Low strength	0.50		
CsA:						
Canal---------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Depth to saturated zone	0.50	Low strength	0.50
			Low strength	0.50		

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ee:						
Eel	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50		
			Depth to saturated zone	0.50		
EkA:						
Eldean	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
EkB:						
Eldean	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
EnC2:						
Eldean	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Eu:						
Euclid	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
FbA:						
Fitchville	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
FhA:						
Fox	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
FhB:						
Fox	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
FhC2:						
Fox	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
FhD2:						
Fox	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
FmA:						
Fox	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
FmB:						
Fox	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GaB:						
Gallman	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
GcD:						
Germano	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Slope	0.50
	Depth to bedrock	0.50				
	Slope	0.50				
GcE:						
Germano	Severe		Poorly suited		Moderately suited	
	Slope	1.00	Slope	1.00	Slope	0.50
	Low strength	1.00				
GdF:						
Germano	Severe		Poorly suited		Poorly suited	
	Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	Not rated		Not rated		Not rated	
Gf:						
Gessie	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50		
Gg:						
Gessie	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50		
GkC:						
Gilpin	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
	Depth to bedrock	0.50	Low strength	0.50		
GkD:						
Gilpin	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Depth to bedrock	1.00	Low strength	0.50	Slope	0.50
	Slope	0.50				
GnB:						
Glenford	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
GnC2:						
Glenford	Slight		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value	Harvest equipment operability: Rating class and limiting features	Value
HhC2:						
Hickory-------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
HkE:						
Hickory-------------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50	Slope	0.50
Germano-------------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Slope	0.50
	Slope	0.50				
	Depth to bedrock	0.50				
HmD2:						
Hickory-------------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
Gilpin--------------	Severe		Poorly suited		Moderately suited	
	Depth to bedrock	1.00	Slope	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50		
	Slope	0.50				
HnC2:						
Homewood------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
HoD2:						
Homewood------------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
Gilpin--------------	Severe		Poorly suited		Moderately suited	
	Depth to bedrock	1.00	Slope	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50		
	Slope	0.50				
HoE2:						
Homewood------------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50	Slope	0.50
Gilpin--------------	Severe		Poorly suited		Moderately suited	
	Depth to bedrock	1.00	Slope	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50	Slope	0.50
	Slope	0.50				
JeB:						
Jeneva--------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value	Harvest equipment operability: Rating class and limiting features	Value
Km:						
Kokomo	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
Ko:						
Kokomo	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
Lk:						
Lindside	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Flooding	0.50	Low strength	0.50
	Flooding	0.50	Low strength	0.50		
LtC2:						
Loudonville	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
	Depth to bedrock	0.50	Low strength	0.50		
Steinsburg	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
	Depth to bedrock	0.50	Low strength	0.50		
LtD2:						
Loudonville	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Depth to bedrock	0.50	Low strength	0.50		
	Slope	0.50				
Steinsburg	Severe		Poorly suited		Well suited	
	Low strength	1.00	Slope	1.00		
	Depth to bedrock	0.50				
	Slope	0.50				
LtE:						
Loudonville	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50	Slope	0.50
	Depth to bedrock	0.50				
Steinsburg	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
	Depth to bedrock	0.50				
LtF:						
Loudonville	Severe		Poorly suited		Poorly suited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Low strength	0.50	Low strength	0.50
Steinsburg	Severe		Poorly suited		Poorly suited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00				

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value	Harvest equipment operability: Rating class and limiting features	Value
Ma:						
Marengo	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
Mb:						
Marengo	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
McB:						
McGary	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Depth to saturated zone	0.50	Low strength	0.50
			Low strength	0.50		
Me:						
Medway	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50		
MkB2:						
Miamian	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
MkC2:						
Miamian	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
MmC3:						
Miamian	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Thrifton	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
MmD3:						
Miamian	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
Thrifton	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
Mo:						
Montgomery	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value	Harvest equipment operability: Rating class and limiting features	Value
Mr:						
Muskego----------------	Severe		Poorly suited		Poorly suited	
	Low strength	1.00	Ponding	1.00	Low strength	1.00
			Low strength	1.00		
			Depth to saturated zone	1.00		
NaD2:						
Negley-----------------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50		
NaE:						
Negley-----------------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50	Slope	0.50
Ne:						
Newark-----------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Depth to saturated zone	0.50	Low strength	0.50
	Flooding	0.50				
			Flooding	0.50		
			Low strength	0.50		
OcA:						
Ockley-----------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
OcB:						
Ockley-----------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
Pa:						
Patton-----------------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
Pb:						
Patton-----------------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
Pe:						
Pewamo-----------------	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
Ph:						
Pits-------------------	Not rated		Not rated		Not rated	
PkB:						
Pike-------------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
PkC2:						
Pike	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Ro:						
Rockmill	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
Rp:						
Rockmill	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Ponding	1.00	Low strength	0.50
	Low strength	1.00	Flooding	1.00		
			Depth to saturated zone	1.00		
			Low strength	0.50		
Rt:						
Rossburg	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50		
Sc:						
Sebring	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
SdD:						
Shelocta	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50	Slope	0.50
SeE:						
Shelocta	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50	Slope	0.50
Berks	Severe		Poorly suited		Moderately suited	
	Slope	1.00	Slope	1.00	Slope	0.50
	Low strength	1.00	Low strength	0.50	Low strength	0.50
SfD:						
Shelocta	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50	Slope	0.50
Cruze	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Slope	1.00	Low strength	0.50
	Low strength	1.00	Soil slippage	1.00	Slope	0.50
	Slope	0.50	Low strength	0.50		

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SfE:						
Shelocta------------	Severe		Poorly suited		Moderately suited	
	Slope	1.00	Slope	1.00	Slope	0.50
	Low strength	1.00	Low strength	0.50	Low strength	0.50
Cruze---------------	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Slope	1.00	Slope	0.50
	Slope	1.00	Soil slippage	1.00	Low strength	0.50
	Low strength	1.00	Low strength	0.50		
Sh:						
Shoals--------------	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	1.00	Depth to saturated zone	0.50		
			Low strength	0.50		
SkA:						
Sleeth--------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Depth to saturated zone	0.50	Low strength	0.50
			Low strength	0.50		
St:						
Stonelick-----------	Severe		Poorly suited		Well suited	
	Flooding	1.00	Flooding	1.00		
TaC2:						
Tarlton-------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
	Depth to bedrock	0.50	Low strength	0.50		
ThA:						
Thackery------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
ThB:						
Thackery------------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
Ud, Uf, Ug:						
Udorthents----------	Not rated		Not rated		Not rated	
Um:						
Urban land----------	Not rated		Not rated		Not rated	
Aetna---------------	Not rated		Not rated		Not rated	
UoC:						
Urban land----------	Not rated		Not rated		Not rated	
Amanda--------------	Not rated		Not rated		Not rated	
UrB:						
Urban land----------	Not rated		Not rated		Not rated	
Bennington----------	Not rated		Not rated		Not rated	

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UtC:						
Urban land	Not rated		Not rated		Not rated	
Cardington	Not rated		Not rated		Not rated	
UuB:						
Urban land	Not rated		Not rated		Not rated	
Celina	Not rated		Not rated		Not rated	
UxB:						
Urban land	Not rated		Not rated		Not rated	
Ockley	Not rated		Not rated		Not rated	
Uy:						
Urban land	Not rated		Not rated		Not rated	
Udorthents	Not rated		Not rated		Not rated	
WdA:						
Wea	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50
WeC:						
Wellston	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
WfC:						
Wellston	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Cruze	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Wg:						
Westland	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
Wk:						
Westland	Severe		Poorly suited		Moderately suited	
	Low strength	1.00	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
ZnB:						
Zanesville	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Low strength	0.50	Low strength	0.50

Table 13b.--Woodland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ZnC2:						
Zanesville----------	Severe		Moderately suited		Moderately suited	
	Low strength	1.00	Slope	0.50	Low strength	0.50
			Low strength	0.50		

Table 13c.--Woodland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Suitability for mechanical planting		Suitability for site preparation		Potential for damage to soil by fire	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AfB:						
Alford	Well suited		Well suited		Moderate	
					Texture/rock fragments	0.50
AfC2:						
Alford	Moderately suited		Well suited		Moderate	
	Stickiness	0.50			Texture/rock fragments	0.50
	Slope	0.50				
Ag:						
Aetna	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Ah:						
Aetna	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
AmB:						
Amanda	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
AmB2:						
Amanda	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
AmC2:						
Amanda	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
AmD2:						
Amanda	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/surface depth/rock fragments	0.30
AmE2:						
Amanda	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/rock fragments	0.01
AoC3:						
Amanda	Moderately suited		Well suited		Moderate	
	Slope	0.50			Texture/rock fragments	0.70
AoD3:						
Amanda	Poorly suited		Poorly suited		Moderate	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.70

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
ApB2:						
Amanda	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Loudonville	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
ApC2:						
Amanda	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
Loudonville	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
ApD2:						
Amanda	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
Loudonville	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/surface depth/rock fragments	0.30
ArC2:						
Amanda	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
Ockley	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
	Slope	0.50				
ArD2:						
Amanda	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
Ockley	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
	Stickiness	0.50				
Bb:						
Beaucoup	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.30
BeA:						
Bennington	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
BeB:						
Bennington	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
BkF:						
Berks	Unsuited		Unsuited		Moderate	
	Slope	1.00	Slope	1.00	Texture/slope/ surface depth/ rock fragments	0.50
	Rock fragment content	1.00	Rock fragment content	0.50		
CaB:						
Cardington	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
CaB2:						
Cardington	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
CaC2:						
Cardington	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
CaD2:						
Cardington	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
Cb:						
Carlisle	Well suited		Well suited		Low	
CdF:						
Cedarfalls	Unsuited		Unsuited		Moderate	
	Slope	1.00	Slope	1.00	Texture/slope/ rock fragments	0.50
Rock outcrop	Not rated		Not rated		Not rated	
CeB:						
Celina	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
CfB:						
Centerburg	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
CfB2:						
Centerburg	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
CfC2:						
Centerburg	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
Cg:						
Chagrin	Well suited		Well suited		Low	
					Texture/rock fragments	0.01

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
CkC2:						
Cincinnati----------	Moderately suited		Well suited		Moderate	
	Slope	0.50			Texture/rock fragments	0.50
CmC2:						
Cincinnati----------	Moderately suited		Well suited		Moderate	
	Slope	0.50			Texture/rock fragments	0.50
Wellston------------	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
Cn:						
Condit--------------	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
CoB:						
Corwin--------------	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
CrA:						
Crosby--------------	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
CsA:						
Canal---------------	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Ee:						
Eel-----------------	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
EkA:						
Eldean--------------	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
	Rock fragment content	0.50				
EkB:						
Eldean--------------	Moderately suited		Well suited		Low	
	Rock fragment content	0.50			Texture/rock fragments	0.01
EnC2:						
Eldean--------------	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
	Rock fragment content	0.50				
	Slope	0.50				
Eu:						
Euclid--------------	Well suited		Well suited		Low	
					Texture/rock fragments	0.01

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting		Suitability for site preparation		Potential for damage to soil by fire	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FbA:						
Fitchville	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
FhA:						
Fox	Moderately suited		Well suited		Low	
	Rock fragment content	0.50			Texture/rock fragments	0.01
FhB:						
Fox	Moderately suited		Well suited		Low	
	Rock fragment content	0.50			Texture/rock fragments	0.01
FhC2:						
Fox	Moderately suited		Well suited		Low	
	Rock fragment content	0.50			Texture/rock fragments	0.01
	Slope	0.50				
FhD2:						
Fox	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
FmA:						
Fox	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
FmB:						
Fox	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
GaB:						
Gallman	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
GcD:						
Germano	Poorly suited		Poorly suited		Moderate	
	Slope	0.75	Slope	0.75	Texture/surface depth/rock fragments	0.50
	Rock fragment content	0.50				
GcE:						
Germano	Unsuited		Poorly suited		Moderate	
	Slope	1.00	Slope	0.75	Texture/slope/ rock fragments	0.70
GdF:						
Germano	Unsuited		Unsuited		Moderate	
	Slope	1.00	Slope	1.00	Texture/slope/ rock fragments	0.70
	Rock fragment content	0.50				
Rock outcrop	Not rated		Not rated		Not rated	

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
Gf:						
Gessie	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Gg:						
Gessie	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
GkC:						
Gilpin	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
	Rock fragment content	0.50				
GkD:						
Gilpin	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.50				
GnB:						
Glenford	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
GnC2:						
Glenford	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
HhC2:						
Hickory	Moderately suited		Well suited		Moderate	
	Stickiness	0.50			Texture/rock fragments	0.50
	Slope	0.50				
HkE:						
Hickory	Unsuited		Poorly suited		Moderate	
	Slope	1.00	Slope	0.75	Texture/rock fragments	0.50
	Stickiness	0.50				
Germano	Unsuited		Poorly suited		Moderate	
	Slope	1.00	Slope	0.75	Texture/rock fragments	0.50
	Rock fragment content	0.50				
HmD2:						
Hickory	Poorly suited		Poorly suited		Moderate	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.50
	Stickiness	0.50				
Gilpin	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.50				
HnC2:						
Homewood	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting		Suitability for site preparation		Potential for damage to soil by fire	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HoD2:						
Homewood	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
Gilpin	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.50				
HoE2:						
Homewood	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/rock fragments	0.01
Gilpin	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.50				
JeB:						
Jeneva	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Km:						
Kokomo	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
Ko:						
Kokomo	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.30
Lk:						
Lindside	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
LtC2:						
Loudonville	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
Steinsburg	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
LtD2:						
Loudonville	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/surface depth/rock fragments	0.30
Steinsburg	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.50				

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting		Suitability for site preparation		Potential for damage to soil by fire	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LtE:						
Loudonville	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/rock fragments	0.01
Steinsburg	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/surface depth/rock fragments	0.30
	Rock fragment content	0.50				
LtF:						
Loudonville	Unsuited		Unsuited		Low	
	Slope	1.00	Slope	1.00	Texture/slope/ rock fragments	0.30
Steinsburg	Unsuited		Unsuited		Moderate	
	Slope	1.00	Slope	1.00	Texture/slope/ surface depth/ rock fragments	0.50
Ma:						
Marengo	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Mb:						
Marengo	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
McB:						
McGary	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
Me:						
Medway	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
MkB2:						
Miamian	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
MkC2:						
Miamian	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
MmC3:						
Miamian	Moderately suited		Well suited		Moderate	
	Stickiness	0.50			Texture/rock fragments	0.70
	Slope	0.50				
Thrifton	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
	Slope	0.50				

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
MmD3:						
Miamian	Poorly suited		Poorly suited		High	
	Slope	0.75	Slope	0.75	Texture/surface depth/rock fragments	1.00
	Stickiness	0.50				
Thrifton	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/surface depth/rock fragments	0.30
	Stickiness	0.50				
Mo:						
Montgomery	Poorly suited		Unsuited		Low	
	Stickiness	0.75	Stickiness	1.00	Texture/rock fragments	0.30
Mr:						
Muskego	Well suited		Well suited		Low	
NaD2:						
Negley	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.50				
NaE:						
Negley	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.50				
Ne:						
Newark	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
OcA:						
Ockley	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
OcB:						
Ockley	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
Pa:						
Patton	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.30
Pb:						
Patton	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.30
Pe:						
Pewamo	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.30

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
Ph:						
Pits	Not rated		Not rated		Not rated	
PkB:						
Pike	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
PkC2:						
Pike	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
Ro:						
Rockmill	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Rp:						
Rockmill	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Rt:						
Rossburg	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Sc:						
Sebring	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
SdD:						
Shelocta	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/surface depth/rock fragments	0.30
SeE:						
Shelocta	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/rock fragments	0.01
Berks	Unsuited		Poorly suited		Moderate	
	Slope	1.00	Slope	0.75	Texture/slope/ surface depth/ rock fragments	0.50
	Rock fragment content	0.50				
SfD:						
Shelocta	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
Cruze	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
SfE:						
Shelocta------------	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/slope/ rock fragments	0.30
Cruze---------------	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/rock fragments	0.01
Sh:						
Shoals--------------	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
SkA:						
Sleeth--------------	Well suited		Well suited		Moderate	
					Texture/rock fragments	0.50
St:						
Stonelick-----------	Well suited		Well suited		Moderate	
					Texture/rock fragments	0.50
TaC2:						
Tarlton-------------	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
	Stickiness	0.50				
ThA:						
Thackery------------	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
ThB:						
Thackery------------	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Ud, Uf, Ug:						
Udorthents----------	Not rated		Not rated		Not rated	
Um:						
Urban land----------	Not rated		Not rated		Not rated	
Aetna---------------	Not rated		Not rated		Not rated	
UoC:						
Urban land----------	Not rated		Not rated		Not rated	
Amanda--------------	Not rated		Not rated		Not rated	
UrB:						
Urban land----------	Not rated		Not rated		Not rated	
Bennington----------	Not rated		Not rated		Not rated	

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
UtC:						
Urban land	Not rated		Not rated		Not rated	
Cardington	Not rated		Not rated		Not rated	
UuB:						
Urban land	Not rated		Not rated		Not rated	
Celina	Not rated		Not rated		Not rated	
UxB:						
Urban land	Not rated		Not rated		Not rated	
Ockley	Not rated		Not rated		Not rated	
Uy:						
Urban land	Not rated		Not rated		Not rated	
Udorthents	Not rated		Not rated		Not rated	
WdA:						
Wea	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
WeC:						
Wellston	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
WfC:						
Wellston	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
Cruze	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
Wg:						
Westland	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
	Rock fragment content	0.50				
Wk:						
Westland	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.30
ZnB:						
Zanesville	Well suited		Well suited		Moderate	
					Texture/rock fragments	0.50

Table 13c.--Woodland Management--Continued

Map symbol and soil name	Suitability for mechanical planting		Suitability for site preparation		Potential for damage to soil by fire	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ZnC2:						
Zanesville----------	Moderately suited		Well suited		Moderate	
	Slope	0.50			Texture/rock fragments	0.50

Table 14.--Woodland Productivity

(See text for definitions of terms used in this table. Absence of an entry indicates that the soil is generally not used as woodland)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
AfB:				
Alford------------------	Tuliptree-----------	105	114	Black cherry, black locust, black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Northern red oak----	---	---	
AfC2:				
Alford------------------	Tuliptree-----------	105	114	Black cherry, black locust, black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Northern red oak----	---	---	
Ag:				
Aetna-------------------	Black cherry--------	---	---	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple---------	---	---	
	Tuliptree-----------	---	---	
	White ash-----------	---	---	
	White oak-----------	---	---	
	Northern red oak----	76	57	
Ah:				
Aetna-------------------	Black cherry--------	---	---	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple---------	---	---	
	Tuliptree-----------	---	---	
	White ash-----------	---	---	
	White oak-----------	---	---	
	Northern red oak----	76	57	
AmB:				
Amanda------------------	Black cherry--------	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut--------	---	---	
	Sugar maple---------	---	---	
	Tuliptree-----------	---	---	
	White ash-----------	---	---	
	White oak-----------	---	---	
	Northern red oak----	87	72	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
AmB2:				
Amanda------------------	Black cherry--------	---	---	Black walnut,
	Black walnut--------	---	---	eastern white
	Sugar maple---------	---	---	pine, northern red
	Tuliptree-----------	---	---	oak, red pine,
	White ash-----------	---	---	tuliptree, white
	White oak-----------	---	---	ash, white oak
	Northern red oak----	87	72	
AmC2:				
Amanda------------------	Black cherry--------	---	---	Black walnut,
	Black walnut--------	---	---	eastern white
	Sugar maple---------	---	---	pine, northern red
	Tuliptree-----------	---	---	oak, red pine,
	White ash-----------	---	---	tuliptree, white
	White oak-----------	---	---	ash, white oak
	Northern red oak----	87	72	
AmD2:				
Amanda------------------	Black cherry--------	---	---	Black walnut,
	Black walnut--------	---	---	eastern white
	Sugar maple---------	---	---	pine, northern red
	Tuliptree-----------	---	---	oak, red pine,
	White ash-----------	---	---	tuliptree, white
	White oak-----------	---	---	ash, white oak
	Northern red oak----	87	72	
AmE2:				
Amanda------------------	Black cherry--------	---	---	Black walnut,
	Black walnut--------	---	---	eastern white
	Sugar maple---------	---	---	pine, northern red
	Tuliptree-----------	---	---	oak, red pine,
	White ash-----------	---	---	tuliptree, white
	White oak-----------	---	---	ash, white oak
	Northern red oak----	87	72	
AoC3:				
Amanda------------------	Black cherry--------	---	---	Black walnut,
	Black walnut--------	---	---	eastern white
	Sugar maple---------	---	---	pine, northern red
	Tuliptree-----------	---	---	oak, red pine,
	White ash-----------	---	---	tuliptree, white
	White oak-----------	---	---	ash, white oak
	Northern red oak----	87	72	
AoD3:				
Amanda------------------	Black cherry--------	---	---	Black walnut,
	Black walnut--------	---	---	eastern white
	Sugar maple---------	---	---	pine, northern red
	Tuliptree-----------	---	---	oak, red pine,
	White ash-----------	---	---	tuliptree, white
	White oak-----------	---	---	ash, white oak
	Northern red oak----	87	72	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
ApB2:				
Amanda	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
Loudonville	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black oak	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	
ApC2:				
Amanda	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
Loudonville	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black oak	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	
ApD2:				
Amanda	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
Loudonville	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black oak	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
ArC2:				
Amanda	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
Ockley	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
ArD2:				
Amanda	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
Ockley	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
Bb:				
Beaucoup	American sycamore	---	---	American sycamore, eastern cottonwood, pin oak, red maple, sweetgum
	Cherrybark oak	---	---	
	Eastern cottonwood	100	129	
	Sweetgum	---	---	
	Pin oak	90	72	
BeA:				
Bennington	Black oak	88	72	American sycamore, black oak, eastern white pine, green ash, northern red oak, red maple, river birch, tuliptree, white ash, white oak
	Tuliptree	94	100	
	White ash	87	86	
	Northern red oak	86	72	
BeB:				
Bennington	Black oak	88	72	American sycamore, black oak, eastern white pine, green ash, northern red oak, red maple, river birch, tuliptree, white ash, white oak
	Tuliptree	94	100	
	White ash	87	86	
	Northern red oak	86	72	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
BkF:				
Berks	Virginia pine	70	114	Japanese larch, Norway spruce, Virginia pine, eastern white pine, red pine
	Black oak	70	57	
	Northern red oak	70	57	
CaB:				
Cardington	Black cherry	---	---	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	
CaB2:				
Cardington	Black cherry	---	---	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	
CaC2:				
Cardington	Black cherry	---	---	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	
CaD2:				
Cardington	Black cherry	---	---	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	
Cb:				
Carlisle	Black cherry	---	---	Black willow, green ash, red maple
	Eastern cottonwood	80	86	
	Green ash	---	---	
	Red maple	---	---	
	White ash	---	---	
	Swamp white oak	---	---	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
CdF:				
Cedarfalls	Eastern hemlock	---	---	Virginia pine, black cherry, eastern white pine, red pine
	Quaking aspen	50	43	
	Tuliptree	89	86	
	Black oak	71	57	
Rock outcrop.				
CeB:				
Celina	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	110	129	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	90	72	
CfB:				
Centerburg	Black cherry	---	---	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	89	72	
CfB2:				
Centerburg	Black cherry	---	---	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	89	72	
CfC2:				
Centerburg	Black cherry	---	---	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	89	72	
Cg:				
Chagrin	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	86	57	
	Tuliptree	96	100	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	86	72	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
CkC2:				
Cincinnati	American beech	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	American sycamore	---	---	
	Slippery elm	---	---	
	Sugar maple	---	---	
	White oak	---	---	
	Northern red oak	80	57	
CmC2:				
Cincinnati	American beech	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	American sycamore	---	---	
	Slippery elm	---	---	
	Sugar maple	---	---	
	White oak	---	---	
	Northern red oak	80	57	
Wellston	Virginia pine	70	114	Black walnut, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Black cherry	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	90	86	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	81	57	
Cn:				
Condit	Black oak	88	72	American sycamore, black oak, eastern white pine, green ash, northern red oak, red maple, river birch, tuliptree, white ash, white oak
	Tuliptree	94	100	
	White ash	87	86	
	Northern red oak	86	72	
CoB:				
Corwin	Black cherry	---	---	American sycamore, black oak, eastern white pine, green ash, northern red oak, red maple, river birch, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	110	129	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	90	72	
CrA:				
Crosby	Black oak	88	72	American sycamore, black oak, eastern white pine, green ash, northern red oak, red maple, river birch, tuliptree, white ash, white oak
	Tuliptree	94	100	
	White ash	87	86	
	Northern red oak	86	72	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
CsA:				
Canal	Pin oak	90	72	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	Northern red oak	80	57	
Ee:				
Eel	Black walnut	---	---	Black locust, black walnut, eastern white pine, tuliptree
	Eastern cottonwood	---	---	
	Tuliptree	108	114	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
EkA:				
Eldean	Black cherry	---	---	Black walnut, eastern white pine, red pine, tuliptree, white ash, white oak
	Black oak	80	57	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	80	57	
	Northern red oak	80	57	
EkB:				
Eldean	Black cherry	---	---	Black walnut, eastern white pine, red pine, tuliptree, white ash, white oak
	Black oak	80	57	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	80	57	
	Northern red oak	80	57	
EnC2:				
Eldean	Black cherry	---	---	Black walnut, eastern white pine, red pine, tuliptree, white ash, white oak
	Black oak	80	57	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	80	57	
	Northern red oak	80	57	
Eu:				
Euclid	Black cherry	---	---	Eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Pin oak	86	72	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
FbA:				
Fitchville	Pin oak	90	72	Norway spruce, Scotch pine, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	Sugar maple	---	---	
	Tuliptree	---	---	
	Northern red oak	80	57	
FhA:				
Fox	Black cherry	---	---	Black locust, eastern white pine, red pine, tuliptree, white ash
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
FhB:				
Fox	Black cherry	---	---	Black locust, eastern white pine, red pine, tuliptree, white ash
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
FhC2:				
Fox	Black cherry	---	---	Black locust, eastern white pine, red pine, tuliptree, white ash
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
FhD2:				
Fox	Black cherry	---	---	Black locust, eastern white pine, red pine, tuliptree, white ash
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
FmA:				
Fox	Black cherry	---	---	Black locust, eastern white pine, red pine, tuliptree, white ash
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
FmB:				
Fox	Black cherry	---	---	Black locust, eastern white pine, red pine, tuliptree, white ash
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
GaB:				
Gallman	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	90	72	
GcD:				
Germano	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	90	86	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
GcE:				
Germano	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	90	86	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
GdF:				
Germano	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	90	86	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
Rock outcrop.				
Gf:				
Gessie	Black cherry	---	---	American sycamore, black oak, eastern white pine, green ash, northern red oak, red maple, river birch, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	95	100	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
Gg:				
Gessie	Black cherry	---	---	American sycamore, black oak, eastern white pine, green ash, northern red oak, red maple, river birch, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	95	100	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
GkC:				
Gilpin	Tuliptree	95	100	Japanese larch, Virginia pine, black cherry, eastern white pine, tuliptree
	Northern red oak	80	57	
GkD:				
Gilpin	Tuliptree	95	100	Japanese larch, Virginia pine, black cherry, eastern white pine, tuliptree
	Northern red oak	80	57	
GnB:				
Glenford	Black cherry	---	---	Norway spruce, Scotch pine, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	96	100	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	86	72	
GnC2:				
Glenford	Black cherry	---	---	Norway spruce, Scotch pine, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	96	100	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	86	72	
HhC2:				
Hickory	Bitternut hickory	---	---	Black walnut, eastern white pine, red pine, sugar maple, tuliptree, white oak
	Black oak	---	---	
	Green ash	---	---	
	Tuliptree	95	100	
	White oak	85	72	
	Northern red oak	85	72	
HkE:				
Hickory	Bitternut hickory	---	---	Black walnut, eastern white pine, red pine, sugar maple, tuliptree, white oak
	Black oak	---	---	
	Green ash	---	---	
	Tuliptree	95	100	
	White oak	85	72	
	Northern red oak	85	72	
Germano	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	90	86	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
HmD2:				
Hickory	Bitternut hickory	---	---	Black walnut, eastern white pine, red pine, sugar maple, tuliptree, white oak
	Black oak	---	---	
	Green ash	---	---	
	Tuliptree	95	100	
	White oak	85	72	
	Northern red oak	85	72	
Gilpin	Tuliptree	95	100	Japanese larch, Virginia pine, black cherry, eastern white pine, tuliptree
	Northern red oak	80	57	
HnC2:				
Homewood	American beech	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	American sycamore	---	---	
	Slippery elm	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	80	70	
	Northern red oak	90	72	
HoD2:				
Homewood	Sweetgum	76	72	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Tuliptree	98	100	
	White oak	90	72	
Gilpin	Tuliptree	95	100	Japanese larch, Virginia pine, black cherry, eastern white pine, tuliptree
	Northern red oak	80	57	
HoE2:				
Homewood	Sweetgum	76	72	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Tuliptree	98	100	
	White oak	80	72	
Gilpin	Tuliptree	95	100	Japanese larch, Virginia pine, black cherry, eastern white pine, tuliptree
	Northern red oak	80	57	
JeB:				
Jeneva	Sweetgum	76	72	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Tuliptree	98	100	
	White oak	90	72	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Km:				
Kokomo	Pin oak	85	72	American sycamore, Norway spruce, bur oak, eastern cottonwood, green ash, pin oak, red maple, river birch, swamp white oak
	Sweetgum	90	100	
	White oak	75	57	
	Northern red oak	75	57	
Ko:				
Kokomo	Pin oak	85	72	American sycamore, Norway spruce, bur oak, eastern cottonwood, green ash, pin oak, red maple, river birch, swamp white oak
	Sweetgum	90	100	
	White oak	75	57	
	Northern red oak	75	57	
Lk:				
Lindside	Black walnut	---	---	Japanese larch, Norway spruce, black oak, black walnut, eastern white pine, northern red oak, shortleaf pine, tuliptree, white ash, white oak
	Red maple	---	---	
	Tuliptree	95	100	
	White ash	85	57	
	White oak	85	72	
	Northern red oak	86	72	
LtC2:				
Loudonville	Black cherry	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Black oak	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	
Steinsburg	Virginia pine	70	114	European larch, Norway spruce, Virginia pine, eastern white pine
	Tuliptree	---	---	
	Northern red oak	80	57	
LtD2:				
Loudonville	Black cherry	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Black oak	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	
Steinsburg	Virginia pine	70	114	European larch, Norway spruce, Virginia pine, eastern white pine
	Tuliptree	---	---	
	Northern red oak	80	57	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
LtE:				
Loudonville	Black cherry	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Black oak	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	
Steinsburg	Virginia pine	70	114	European larch, Norway spruce, Virginia pine, eastern white pine
	Tuliptree	---	---	
	Northern red oak	80	57	
LtF:				
Loudonville	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black oak	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	
Steinsburg	Virginia pine	70	114	European larch, Norway spruce, Virginia pine, eastern white pine
	Tuliptree	---	---	
	Northern red oak	80	57	
Ma:				
Marengo	Black cherry	---	---	American sycamore, baldcypress, eastern cottonwood, green ash, pin oak, red maple, swamp white oak, sweetgum
	Eastern cottonwood	---	---	
	Green ash	---	---	
	Pin oak	86	72	
	Red maple	---	---	
	Swamp white oak	75	57	
	Northern red oak	88	72	
Mb:				
Marengo	Black cherry	---	---	American sycamore, baldcypress, eastern cottonwood, green ash, pin oak, red maple, swamp white oak, sweetgum
	Eastern cottonwood	---	---	
	Green ash	---	---	
	Pin oak	86	72	
	Red maple	---	---	
	Swamp white oak	75	57	
	Northern red oak	88	72	
McB:				
McGary	Pin oak	85	72	American sycamore, baldcypress, bur oak, eastern cottonwood, green ash, pin oak, red maple, swamp white oak, sweetgum
	Sweetgum	80	86	
	Tuliptree	85	86	
	White oak	70	57	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Me:				
Medway	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	96	100	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	86	72	
MkB2:				
Miamian	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
MkC2:				
Miamian	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
MmC3:				
Miamian	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
Thrifton	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
MmD3:				
Miamian	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
Thrifton	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Mo:				
Montgomery	Sweetgum	90	100	American sycamore, eastern cottonwood, green ash, pin oak, red maple, silver maple
	White oak	75	57	
	Pin oak	88	72	
Mr:				
Muskego	Black willow	---	---	American sycamore, black oak, eastern white pine, green ash, northern red oak, red maple, river birch, tuliptree, white ash, white oak
	Green ash	---	---	
	Quaking aspen	56	57	
	Red maple	51	29	
	Silver maple	---	---	
	Swamp white oak	---	---	
	White ash	52	29	
	Pin oak	90	72	
NaD2:				
Negley	Black cherry	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	90	72	
	Northern red oak	90	72	
NaE:				
Negley	Black cherry	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	90	72	
	Northern red oak	90	72	
Ne:				
Newark	Eastern cottonwood	94	---	American sycamore, eastern cottonwood, eastern white pine, loblolly pine, post oak, red maple, sweetgum, tuliptree
	Pin oak	99	57	
	Sweetgum	88	100	
	Tuliptree	95	100	
	Northern red oak	85	57	
OcA:				
Ockley	Black cherry	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	90	72	
	Northern red oak	90	72	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
OcB:				
Ockley	Black cherry	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	90	72	
	Northern red oak	90	72	
Pa:				
Patton	Pin oak	85	72	Norway spruce, baldcypress, eastern white pine, pin oak, red maple, sweetgum, white ash
	Sweetgum	80	86	
	White oak	75	57	
	Northern red oak	75	57	
Pb:				
Patton	Pin oak	85	72	Norway spruce, baldcypress, eastern white pine, pin oak, red maple, sweetgum, white ash
	Sweetgum	80	86	
	White oak	75	57	
	Northern red oak	75	57	
Pe:				
Pewamo	Eastern cottonwood	98	129	Norway spruce, eastern white pine, green ash, red maple, white ash
	Green ash	---	---	
	Red maple	71	43	
	Swamp white oak	---	---	
	White ash	71	72	
	Pin oak	90	72	
Ph.				
Pits				
PkB:				
Pike	Sweetgum	76	72	Black cherry, black locust, black walnut, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Tuliptree	98	100	
	White oak	90	72	
PkC2:				
Pike	Sweetgum	76	72	Black cherry, black locust, black walnut, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Tuliptree	98	100	
	White oak	90	72	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Ro:				
Rockmill	Black willow	---	---	American sycamore, black oak, eastern white pine, green ash, northern red oak, red maple, river birch, tuliptree, white ash, white oak
	Silver maple	70	29	
	Swamp white oak	---	---	
	Pin oak	90	72	
Rp:				
Rockmill	Black willow	---	---	American sycamore, black oak, eastern white pine, green ash, northern red oak, red maple, river birch, tuliptree, white ash, white oak
	Silver maple	70	29	
	Swamp white oak	---	---	
	Pin oak	90	72	
Rt:				
Rossburg	Black cherry	---	---	Black cherry, black locust, black walnut, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	90	72	
	Northern red oak	---	---	
Sc:				
Sebring	Black cherry	---	---	American sycamore, Norway spruce, Scotch pine, eastern cottonwood, eastern white pine, green ash, pin oak, red maple, swamp white oak, sweetgum
	Eastern cottonwood	---	---	
	Green ash	---	---	
	Red maple	---	---	
	Swamp white oak	---	---	
	Pin oak	90	72	
SdD:				
Shelocta	American beech	---	---	Black walnut, eastern white pine, northern red oak, shortleaf pine, tuliptree, white ash, white oak
	Cucumbertree	---	---	
	Red maple	81	---	
	Scarlet oak	80	57	
	Shortleaf pine	77	129	
	Tuliptree	99	100	
	White oak	77	57	
SeE:				
Shelocta	American beech	---	---	Black walnut, eastern white pine, northern red oak, shortleaf pine, tuliptree, white ash, white oak
	Cucumbertree	---	---	
	Red maple	81	---	
	Scarlet oak	80	57	
	Shortleaf pine	77	129	
	Tuliptree	99	100	
	White oak	77	57	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
SeE:				
Berks	Virginia pine	70	114	Japanese larch, Norway spruce, Virginia pine, eastern white pine, red pine
	Black oak	70	57	
	Northern red oak	70	57	
SfD:				
Shelocta	American beech	---	---	Eastern white pine, shortleaf pine, white oak
	Black oak	73	57	
	Blackgum	---	---	
	Red maple	55	---	
	Scarlet oak	70	57	
	Tuliptree	90	86	
	White oak	65	43	
Cruze	Black cherry	---	---	Eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	68	57	
SfE:				
Shelocta	American beech	---	---	Eastern white pine, shortleaf pine, white oak
	Black oak	73	57	
	Blackgum	---	---	
	Red maple	55	---	
	Scarlet oak	70	57	
	Tuliptree	90	86	
	White oak	65	43	
Cruze	Black cherry	---	---	Eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	68	57	
Sh:				
Shoals	Virginia pine	90	129	Pin oak, red maple, swamp chestnut oak, sweetgum, tuliptree
	Eastern cottonwood	---	---	
	Sweetgum	86	100	
	Tuliptree	90	86	
	White ash	---	---	
	Pin oak	90	72	
SkA:				
Sleeth	Sweetgum	80	86	American sycamore, Norway spruce, black cherry, bur oak, green ash, pin oak, red maple, river birch, swamp white oak, white ash
	Tuliptree	85	86	
	White oak	70	57	
	Pin oak	85	72	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
St: Stonelick	Black cherry	---	---	Black walnut, eastern white pine, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	95	100	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
TaC2: Tarlton	Black cherry	---	---	Eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	80	57	
ThA: Thackery	Black cherry	---	---	Black cherry, black locust, black walnut, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	90	72	
	Northern red oak	90	72	
ThB: Thackery	Black cherry	---	---	Black cherry, black locust, black walnut, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	90	72	
	Northern red oak	90	72	
Ud, Uf, Ug. Udorthents				
Um: Urban land.				
Aetna	Black cherry	---	---	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	76	57	
UoC: Urban land.				

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
UoC:				
Amanda	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	87	72	
UrB:				
Urban land.				
Bennington	Black cherry	---	---	American sycamore, black oak, eastern white pine, green ash, northern red oak, red maple, river birch, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	65	50	
	Northern red oak	70	50	
UtC:				
Urban land.				
Cardington	Black cherry	---	---	American sycamore, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	75	57	
	Northern red oak	80	57	
UuB:				
Urban land.				
Celina	Black cherry	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	110	129	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	90	72	
UxB:				
Urban land.				
Ockley	Black cherry	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	90	72	
	Northern red oak	90	72	
Uy:				
Urban land.				
Udorthents.				

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
WdA:				
Wea	Black cherry	---	---	Virginia pine, black oak, eastern white pine, red pine, tuliptree, white ash
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	90	72	
	Northern red oak	90	72	
WeC:				
Wellston	Virginia pine	70	114	Black walnut, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	Black cherry	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	90	86	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	81	57	
WfC:				
Wellston	Virginia pine	70	114	Fraser's fir, Norway spruce, Scotch pine, black walnut, eastern white pine, northern red oak, tuliptree, white ash, white oak, white spruce
	Black cherry	---	---	
	Black walnut	---	---	
	Sugar maple	---	---	
	Tuliptree	90	86	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	81	57	
Cruze	Black cherry	---	---	Eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak
	Sugar maple	---	---	
	Tuliptree	---	---	
	White ash	---	---	
	White oak	---	---	
	Northern red oak	77	57	
Wg:				
Westland	Sweetgum	90	100	American sycamore, baldcypress, bur oak, eastern cottonwood, green ash, pin oak, red maple, swamp white oak, sweetgum, white ash
	White oak	75	57	
	Pin oak	85	72	
Wk:				
Westland	Sweetgum	90	100	American sycamore, baldcypress, bur oak, eastern cottonwood, green ash, pin oak, red maple, swamp white oak, sweetgum, white ash
	White oak	75	57	
	Pin oak	85	72	

Table 14.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
ZnB:				
Zanesville--------------	Virginia pine-------	66	100	Eastern white pine, northern red oak, shortleaf pine, tuliptree, white ash, white oak
	Black oak-----------	75	57	
	Hickory------------	---	---	
	Shortleaf pine------	63	100	
	Sweetgum------------	---	---	
	Tuliptree-----------	90	86	
	White oak-----------	69	57	
ZnC2:				
Zanesville--------------	Virginia pine-------	66	100	Eastern white pine, northern red oak, shortleaf pine, tuliptree, white ash, white oak
	Black oak-----------	75	57	
	Hickory------------	---	---	
	Shortleaf pine------	63	100	
	Sweetgum------------	---	---	
	Tuliptree-----------	90	86	
	White oak-----------	69	57	

Table 15a.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AfB:						
Alford	Not limited		Not limited		Somewhat limited	
					Slope	0.50
AfC2:						
Alford	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
Ag:						
Aetna	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.76	Depth to saturated zone	0.99
	Depth to saturated zone	0.99			Flooding	0.60
Ah:						
Aetna	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.76	Depth to saturated zone	0.99
	Depth to saturated zone	0.99			Flooding	0.60
AmB:						
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
AmB2:						
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
AmC2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
AmD2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
AmE2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
AoC3:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
AoD3:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
ApB2:						
Amanda	Not limited		Not limited		Somewhat limited	
					Slope	0.50
Loudonville	Not limited		Not limited		Somewhat limited	
					Slope	0.50
					Depth to bedrock	0.01
ApC2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Loudonville	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
					Depth to bedrock	0.10
ApD2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Loudonville	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.06
ArC2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
Ockley	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
ArD2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Ockley	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Bb:						
Beaucoup	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Restricted permeability	0.21	Flooding	0.60
	Restricted permeability	0.21			Restricted permeability	0.21

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
BeA:						
Bennington----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
BeB:						
Bennington----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
					Slope	0.50
BkF:						
Berks---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.39	Gravel content	0.39	Gravel content	1.00
					Depth to bedrock	0.84
					Content of large stones	0.32
CaB:						
Cardington----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.43	Restricted permeability	0.43	Slope	0.50
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Restricted permeability	0.43
					Depth to saturated zone	0.10
CaB2:						
Cardington----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.43	Restricted permeability	0.43	Slope	0.50
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Restricted permeability	0.43
					Depth to saturated zone	0.10
CaC2:						
Cardington----------	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.43	Restricted permeability	0.43	Slope	1.00
	Slope	0.32	Slope	0.32	Restricted permeability	0.43
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Depth to saturated zone	0.10
CaD2:						
Cardington----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Depth to saturated zone	0.10

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
Cb:						
Carlisle------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	1.00
	Gravel content	1.00	Content of organic matter	1.00	Depth to saturated zone	1.00
	Content of organic matter	1.00	Gravel content	1.00	Content of organic matter	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
CdF:						
Cedarfalls----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop--------	Not rated		Not rated		Not rated	
CeB:						
Celina--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Restricted permeability	0.21
					Depth to saturated zone	0.10
CfB:						
Centerburg----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Depth to saturated zone	0.99
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
CfB2:						
Centerburg----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Depth to saturated zone	0.99
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
CfC2:						
Centerburg----------	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Slope	1.00
	Slope	0.32	Slope	0.32	Depth to saturated zone	0.99
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Cg:						
Chagrin-------------	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Flooding	0.40	Flooding	1.00
CkC2:						
Cincinnati----------	Somewhat limited		Somewhat limited		Very limited	
	Depth to fragipan	0.54	Depth to fragipan	0.54	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Depth to fragipan	0.54
	Slope	0.32	Slope	0.32	Restricted permeability	0.43

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
CmC2:						
Cincinnati	Somewhat limited		Somewhat limited		Very limited	
	Depth to fragipan	0.54	Depth to fragipan	0.54	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Depth to fragipan	0.54
	Slope	0.32	Slope	0.32	Restricted permeability	0.43
Wellston	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
Cn:						
Condit	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.98	Restricted permeability	0.98	Restricted permeability	0.98
CoB:						
Corwin	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
	Depth to saturated zone	0.44	Depth to saturated zone	0.21	Slope	0.50
					Depth to saturated zone	0.44
CrA:						
Crosby	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
CsA:						
Canal	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Ee:						
Eel	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.46	Depth to saturated zone	0.80
	Depth to saturated zone	0.80			Flooding	0.60
EkA:						
Eldean	Not limited		Not limited		Not limited	
EkB:						
Eldean	Not limited		Not limited		Somewhat limited	
					Slope	0.50
EnC2:						
Eldean	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
	Gravel content	0.04	Gravel content	0.04	Gravel content	1.00
					Content of large stones	0.01

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
Eu:						
Euclid-------------	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.50	Depth to saturated zone	0.84
	Depth to saturated zone	0.84	Restricted permeability	0.21	Restricted permeability	0.21
	Restricted permeability	0.21				
FbA:						
Fitchville----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
FhA:						
Fox-----------------	Not limited		Not limited		Not limited	
FhB:						
Fox-----------------	Not limited		Not limited		Somewhat limited	
					Slope	0.50
FhC2:						
Fox-----------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
FhD2:						
Fox-----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
FmA:						
Fox-----------------	Not limited		Not limited		Not limited	
FmB:						
Fox-----------------	Not limited		Not limited		Somewhat limited	
					Slope	0.50
GaB:						
Gallman-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.50
					Gravel content	0.22
GcD:						
Germano-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.65
					Content of large stones	0.01
GcE:						
Germano-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.01
					Content of large stones	0.01

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
GdF:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.29
					Content of large stones	0.01
Rock outcrop	Not rated		Not rated		Not rated	
Gf:						
Gessie	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
Gg:						
Gessie	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Flooding	0.40	Flooding	1.00
GkC:						
Gilpin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.68	Slope	0.68	Slope	1.00
					Gravel content	0.43
					Depth to bedrock	0.06
GkD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.54
					Gravel content	0.43
GnB:						
Glenford	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.79	Depth to saturated zone	1.00
					Slope	0.50
GnC2:						
Glenford	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.79	Slope	1.00
	Slope	0.68	Slope	0.68	Depth to saturated zone	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
HhC2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
HkE:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Content of large stones	0.01
HmD2:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
HmD2:						
Gilpin--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.54
					Gravel content	0.43
HnC2:						
Homewood------------	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
	Depth to fragipan	0.86	Depth to fragipan	0.86	Restricted permeability	0.96
	Slope	0.32	Slope	0.32	Depth to fragipan	0.86
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Depth to saturated zone	0.10
HoD2:						
Homewood------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
	Depth to fragipan	0.86	Depth to fragipan	0.86	Depth to fragipan	0.86
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Depth to saturated zone	0.10
Gilpin--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.54
					Gravel content	0.43
HoE2:						
Homewood------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
	Depth to fragipan	0.86	Depth to fragipan	0.86	Depth to fragipan	0.86
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Depth to saturated zone	0.10
Gilpin--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.54
					Gravel content	0.43
JeB:						
Jeneva--------------	Not limited		Not limited		Somewhat limited	
					Slope	0.50
Km:						
Kokomo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Ko:						
Kokomo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
Lk:						
Lindside	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.05	Flooding	0.60
	Depth to saturated zone	0.10			Depth to saturated zone	0.10
LtC2:						
Loudonville	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
					Depth to bedrock	0.10
					Gravel content	0.06
Steinsburg	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
					Depth to bedrock	0.46
LtD2:						
Loudonville	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.06
					Gravel content	0.06
Steinsburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
LtE:						
Loudonville	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.06
					Depth to bedrock	0.03
Steinsburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.96
					Depth to bedrock	0.46
					Content of large stones	0.03
LtF:						
Loudonville	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.01
Steinsburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Ma:						
Marengo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Mb:						
Marengo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
McB:						
McGary	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Restricted permeability	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Depth to saturated zone	1.00	Restricted permeability	1.00
					Slope	0.50
Me:						
Medway	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.05	Flooding	0.60
	Depth to saturated zone	0.10			Depth to saturated zone	0.10
MkB2:						
Miamian	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
MkC2:						
Miamian	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
MmC3:						
Miamian	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Thrifton	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
MmD3:						
Miamian	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Thrifton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Mo:						
Montgomery	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
Mr:						
Muskego	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	1.00
	Gravel content	1.00	Gravel content	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
NaD2:						
Negley	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.06
NaE:						
Negley	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.06
Ne:						
Newark	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00			Flooding	0.60
OcA:						
Ockley	Not limited		Not limited		Not limited	
OcB:						
Ockley	Not limited		Not limited		Somewhat limited	
					Slope	0.50
Pa:						
Patton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Pb:						
Patton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00				
Pe:						
Pewamo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Gravel content	0.04
Ph:						
Pits	Not rated		Not rated		Not rated	
PkB:						
Pike	Not limited		Not limited		Somewhat limited	
					Slope	0.50

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
PkC2:						
Pike	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Slope	0.32	Slope	1.00
Ro:						
Rockmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Rp:						
Rockmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Flooding	0.60
Rt:						
Rossburg	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
Sc:						
Sebring	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Restricted permeability	0.21	Restricted permeability	0.21
	Restricted permeability	0.21				
SdD:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.17
SeE:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.18
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.90
					Gravel content	0.04
SfD:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.17
Cruze	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Depth to saturated zone	0.10
					Gravel content	0.04

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
SfE:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.17
Cruze	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Depth to saturated zone	0.10
					Gravel content	0.04
Sh:						
Shoals	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00			Flooding	0.60
SkA:						
Sleeth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
St:						
Stonelick	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
					Gravel content	0.06
TaC2:						
Tarlton	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
	Slope	0.68	Slope	0.68	Restricted permeability	0.96
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Depth to bedrock	0.16
					Depth to saturated zone	0.10
ThA:						
Thackery	Not limited		Not limited		Not limited	
ThB:						
Thackery	Not limited		Not limited		Somewhat limited	
					Slope	0.50
Ud, Uf, Ug:						
Udorthents	Not rated		Not rated		Not rated	
Um:						
Urban land	Not rated		Not rated		Not rated	
Aetna	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.76	Depth to saturated zone	0.99
	Depth to saturated zone	0.99			Flooding	0.60
UoC:						
Urban land	Not rated		Not rated		Not rated	

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
UoC:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	1.00
	Slope	0.08	Slope	0.08	Restricted permeability	0.21
UrB:						
Urban land	Not rated		Not rated		Not rated	
Bennington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
					Slope	0.13
UtC:						
Urban land	Not rated		Not rated		Not rated	
Cardington	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.43	Restricted permeability	0.43	Slope	1.00
	Depth to saturated zone	0.10	Slope	0.08	Restricted permeability	0.43
	Slope	0.08	Depth to saturated zone	0.05	Depth to saturated zone	0.10
UuB:						
Urban land	Not rated		Not rated		Not rated	
Celina	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Slope	0.13
					Depth to saturated zone	0.10
UxB:						
Urban land	Not rated		Not rated		Not rated	
Ockley	Not limited		Not limited		Somewhat limited	
					Slope	0.13
Uy:						
Urban land	Not rated		Not rated		Not rated	
Udorthents	Not rated		Not rated		Not rated	
WdA:						
Wea	Not limited		Not limited		Not limited	
WeC:						
Wellston	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.68	Slope	0.68	Slope	1.00
WfC:						
Wellston	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.82	Slope	0.82	Slope	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WfC:						
Cruze	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.82	Slope	0.82	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
	Depth to saturated zone	0.10	Depth to saturated zone	0.05	Depth to saturated zone	0.10
					Gravel content	0.04
Wg:						
Westland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Wk:						
Westland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
ZnB:						
Zanesville	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.43	Restricted permeability	0.43	Slope	0.50
	Depth to fragipan	0.26	Depth to fragipan	0.26	Restricted permeability	0.43
					Depth to fragipan	0.26
ZnC2:						
Zanesville	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.68	Slope	0.68	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
	Depth to fragipan	0.26	Depth to fragipan	0.26	Depth to fragipan	0.26

Table 15b.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AfB:						
Alford	Not limited		Not limited		Not limited	
AfC2:						
Alford	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
Ag:						
Aetna	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
					Flooding	0.60
Ah:						
Aetna	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
					Flooding	0.60
AmB:						
Amanda	Not limited		Not limited		Not limited	
AmB2:						
Amanda	Not limited		Not limited		Not limited	
AmC2:						
Amanda	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
AmD2:						
Amanda	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.19				
AmE2:						
Amanda	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.08		
AoC3:						
Amanda	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
AoD3:						
Amanda	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.19				
ApB2:						
Amanda	Not limited		Not limited		Not limited	
Loudonville	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
ApC2:						
Amanda--------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
Loudonville---------	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.10
					Slope	0.04
ApD2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.19				
Loudonville---------	Somewhat limited		Not limited		Very limited	
	Slope	0.19			Slope	1.00
					Depth to bedrock	0.06
ArC2:						
Amanda--------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
Ockley--------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
ArD2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.19				
Ockley--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.19				
Bb:						
Beaucoup------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
BeA:						
Bennington----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
BeB:						
Bennington----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
BkF:						
Berks---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Droughty	1.00
					Depth to bedrock	0.84
					Gravel content	0.39
					Content of large stones	0.32

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
CaB:						
Cardington----------	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.03
CaB2:						
Cardington----------	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.03
CaC2:						
Cardington----------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
					Depth to saturated zone	0.03
CaD2:						
Cardington----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.19			Depth to saturated zone	0.03
Cb:						
Carlisle------------	Very limited		Very limited		Very limited	
	Gravel content	1.00	Gravel content	1.00	Content of organic matter	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	1.00
	Content of organic matter	1.00	Content of organic matter	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
CdF:						
Cedarfalls----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Droughty	0.35
Rock outcrop--------	Not rated		Not rated		Not rated	
CeB:						
Celina--------------	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.03
CfB:						
Centerburg----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
CfB2:						
Centerburg----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
CfC2:						
Centerburg----------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.04

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
Cg:						
Chagrin	Somewhat limited		Somewhat limited		Very limited	
	Flooding	0.40	Flooding	0.40	Flooding	1.00
CkC2:						
Cincinnati	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to fragipan	0.54
					Slope	0.04
CmC2:						
Cincinnati	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to fragipan	0.54
					Slope	0.04
Wellston	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
Cn:						
Condit	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
CoB:						
Corwin	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
CrA:						
Crosby	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
CsA:						
Canal	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Ee:						
Eel	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.08	Depth to saturated zone	0.08	Flooding	0.60
					Depth to saturated zone	0.43
EkA:						
Eldean	Not limited		Not limited		Very limited	
					Carbonate content	1.00
EkB:						
Eldean	Not limited		Not limited		Very limited	
					Carbonate content	1.00
EnC2:						
Eldean	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Carbonate content	1.00
					Slope	0.04
					Gravel content	0.04
					Content of large stones	0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
Eu:						
Euclid	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.11	Depth to saturated zone	0.11	Depth to saturated zone	0.48
FbA:						
Fitchville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
FhA:						
Fox	Not limited		Not limited		Not limited	
FhB:						
Fox	Not limited		Not limited		Not limited	
FhC2:						
Fox	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
FhD2:						
Fox	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.19				
FmA:						
Fox	Not limited		Not limited		Not limited	
FmB:						
Fox	Not limited		Not limited		Not limited	
GaB:						
Gallman	Not limited		Not limited		Not limited	
GcD:						
Germano	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
					Depth to bedrock	0.65
					Droughty	0.10
					Content of large stones	0.01
GcE:						
Germano	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.56	Slope	1.00
					Depth to bedrock	0.01
					Content of large stones	0.01
GdF:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Droughty	0.39
					Depth to bedrock	0.29
					Content of large stones	0.01
Rock outcrop	Not rated		Not rated		Not rated	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
Gf:						
Gessie	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
Gg:						
Gessie	Somewhat limited		Somewhat limited		Very limited	
	Flooding	0.40	Flooding	0.40	Flooding	1.00
GkC:						
Gilpin	Not limited		Not limited		Somewhat limited	
					Slope	0.37
					Depth to bedrock	0.06
GkD:						
Gilpin	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
					Depth to bedrock	0.54
GnB:						
Glenford	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.50	Depth to saturated zone	0.50	Depth to saturated zone	0.78
GnC2:						
Glenford	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.78
	Depth to saturated zone	0.50	Depth to saturated zone	0.50	Slope	0.37
HhC2:						
Hickory	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
HkE:						
Hickory	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.08		
Germano	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.08	Slope	1.00
					Content of large stones	0.01
HmD2:						
Hickory	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.19				
Gilpin	Somewhat limited		Not limited		Very limited	
	Slope	0.19			Slope	1.00
					Depth to bedrock	0.54
					Droughty	0.04
HnC2:						
Homewood	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to fragipan	0.86
					Slope	0.04
					Depth to saturated zone	0.03

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
HoD2:						
Homewood------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.19			Depth to fragipan	0.86
					Depth to saturated zone	0.03
Gilpin--------------	Somewhat limited		Not limited		Very limited	
	Slope	0.19			Slope	1.00
					Depth to bedrock	0.54
HoE2:						
Homewood------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.08	Depth to fragipan	0.86
					Depth to saturated zone	0.03
Gilpin--------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.08	Slope	1.00
					Depth to bedrock	0.54
JeB:						
Jeneva--------------	Not limited		Not limited		Not limited	
Km:						
Kokomo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Ko:						
Kokomo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Lk:						
Lindside------------	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
					Depth to saturated zone	0.03
LtC2:						
Loudonville---------	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.10
					Slope	0.04
Steinsburg----------	Not limited		Not limited		Somewhat limited	
					Droughty	0.57
					Depth to bedrock	0.46
					Slope	0.04
LtD2:						
Loudonville---------	Somewhat limited		Not limited		Very limited	
	Slope	0.19			Slope	1.00
					Depth to bedrock	0.06
Steinsburg----------	Somewhat limited		Not limited		Very limited	
	Slope	0.19			Slope	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
LtE:						
Loudonville----------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.08	Slope	1.00
					Depth to bedrock	0.03
Steinsburg-----------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.08	Slope	1.00
					Droughty	1.00
					Depth to bedrock	0.46
					Content of large stones	0.03
LtF:						
Loudonville----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.01
Steinsburg-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
					Slope	1.00
					Droughty	0.98
Ma:						
Marengo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Mb:						
Marengo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
McB:						
McGary---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Me:						
Medway---------------	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
					Depth to saturated zone	0.03
MkB2:						
Miamian--------------	Not limited		Not limited		Not limited	
MkC2:						
Miamian--------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
MmC3:						
Miamian--------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
Thrifton-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.04

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
MmD3:						
Miamian	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.19				
Thrifton	Somewhat limited		Not limited		Very limited	
	Slope	0.19			Slope	1.00
Mo:						
Montgomery	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Mr:						
Muskego	Very limited		Very limited		Very limited	
	Gravel content	1.00	Gravel content	1.00	Gravel content	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Carbonate content	1.00
					Ponding	1.00
NaD2:						
Negley	Somewhat limited		Not limited		Very limited	
	Slope	0.19			Slope	1.00
NaE:						
Negley	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.08	Slope	1.00
Ne:						
Newark	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Flooding	0.60
OcA:						
Ockley	Not limited		Not limited		Not limited	
OcB:						
Ockley	Not limited		Not limited		Not limited	
Pa:						
Patton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Pb:						
Patton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Pe:						
Pewamo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
Ph:						
Pits	Not rated		Not rated		Not rated	
PkB:						
Pike	Not limited		Not limited		Not limited	
PkC2:						
Pike	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
Ro:						
Rockmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Rp:						
Rockmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
Rt:						
Rossburg	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
Sc:						
Sebring	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
SdD:						
Shelocta	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
SeE:						
Shelocta	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.08	Slope	1.00
Berks	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.56	Slope	1.00
					Droughty	1.00
					Depth to bedrock	0.90
SfD:						
Shelocta	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
Cruze	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.70			Depth to saturated zone	0.03
SfE:						
Shelocta	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.56	Slope	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SfE:						
Cruze	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.56	Depth to saturated zone	0.03
Sh:						
Shoals	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Flooding	0.60
SkA:						
Sleeth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
St:						
Stonelick	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
TaC2:						
Tarlton	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.37
					Depth to bedrock	0.16
					Depth to saturated zone	0.03
ThA:						
Thackery	Not limited		Not limited		Not limited	
ThB:						
Thackery	Not limited		Not limited		Very limited	
					Carbonate content	1.00
Ud, Uf, Ug:						
Udorthents	Not rated		Not rated		Not rated	
Um:						
Urban land	Not rated		Not rated		Not rated	
Aetna	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
					Flooding	0.60
UoC:						
Urban land	Not rated		Not rated		Not rated	
Amanda	Not limited		Not limited		Not limited	
UrB:						
Urban land	Not rated		Not rated		Not rated	
Bennington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
UtC:						
Urban land----------	Not rated		Not rated		Not rated	
Cardington----------	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.03
UuB:						
Urban land----------	Not rated		Not rated		Not rated	
Celina--------------	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.03
UxB:						
Urban land----------	Not rated		Not rated		Not rated	
Ockley--------------	Not limited		Not limited		Not limited	
Uy:						
Urban land----------	Not rated		Not rated		Not rated	
Udorthents----------	Not rated		Not rated		Not rated	
WdA:						
Wea-----------------	Not limited		Not limited		Not limited	
WeC:						
Wellston------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.37
WfC:						
Wellston------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.63
Cruze---------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.63
					Depth to saturated zone	0.03
Wg:						
Westland------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Wk:						
Westland------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
ZnB:						
Zanesville----------	Not limited		Not limited		Somewhat limited	
					Depth to fragipan	0.26

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ZnC2:						
Zanesville----------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.37
					Depth to fragipan	0.26

Table 16.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
AfB:										
Alford	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
AfC2:										
Alford	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Ag:										
Aetna	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Ah:										
Aetna	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
AmB:										
Amanda	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
AmB2:										
Amanda	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
AmC2:										
Amanda	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
AmD2:										
Amanda	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
AmE2:										
Amanda	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
AoC3:										
Amanda	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
AoD3:										
Amanda	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
ApB2:										
Amanda	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Loudonville	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
ApC2:										
Amanda	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Loudonville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
ApD2:										
Amanda	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Loudonville	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
ArC2:										
Amanda	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Ockley	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
ArD2:										
Amanda	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Ockley	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Bb:										
Beaucoup	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good.
BeA:										
Bennington	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
BeB:										
Bennington	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BkF:										
Berks	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
CaB:										
Cardington	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CaB2:										
Cardington	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CaC2:										
Cardington	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
CaD2:										
Cardington	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Cb:										
Carlisle	Fair	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
CdF:										
Cedarfalls	Very poor.	Poor	Good	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
Rock outcrop.										

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
CeB:										
Celina	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CfB:										
Centerburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CfB2:										
Centerburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CfC2:										
Centerburg	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Cg:										
Chagrin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CkC2:										
Cincinnati	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
CmC2:										
Cincinnati	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Wellston	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Cn:										
Condit	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
CoB:										
Corwin	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
CrA:										
Crosby	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
CsA:										
Canal	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Ee:										
Eel	Good	Good	Fair	Good	Good	Poor	Poor	Good	Good	Poor.
EkA:										
Eldean	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
EkB:										
Eldean	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
EnC2:										
Eldean	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Eu:										
Euclid	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
FbA:										
Fitchville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
FhA:										
Fox	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FhB:										
Fox	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FhC2:										
Fox	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
FhD2:										
Fox	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
FmA:										
Fox	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FmB:										
Fox	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GaB:										
Gallman	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
GcD:										
Germano	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
GcE:										
Germano	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
GdF:										
Germano	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Rock outcrop.										
Gf:										
Gessie	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Gg:										
Gessie	Poor	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor.
GkC:										
Gilpin	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
GkD:										
Gilpin	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
GnB:										
Glenford----------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
GnC2:										
Glenford----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
HhC2:										
Hickory-----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
HkE:										
Hickory-----------	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Germano-----------	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
HmD2:										
Hickory-----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Gilpin------------	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
HnC2:										
Homewood----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
HoD2:										
Homewood----------	Poor	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Gilpin------------	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
HoE2:										
Homewood----------	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Gilpin------------	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
JeB:										
Jeneva------------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Km:										
Kokomo------------	Fair	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Ko:										
Kokomo------------	Fair	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Lk:										
Lindside----------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
LtC2:										
Loudonville-------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
LtC2:										
Steinsburg	Fair	Good	Good	Good	Fair	Very poor.	Very poor.	Good	Good	Very poor.
LtD2:										
Loudonville	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Steinsburg	Poor	Fair	Good	Good	Fair	Very poor.	Very poor.	Fair	Good	Very poor.
LtE:										
Loudonville	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Steinsburg	Very poor.	Fair	Good	Good	Fair	Very poor.	Very poor.	Fair	Good	Very poor.
LtF:										
Loudonville	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Steinsburg	Very poor.	Poor	Good	Good	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
Ma:										
Marengo	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Mb:										
Marengo	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
McB:										
McGary	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Me:										
Medway	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
MkB2:										
Miamian	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
MkC2:										
Miamian	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
MmC3:										
Miamian	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Thrifton	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
MmD3:										
Miamian	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Thrifton	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
Mo: Montgomery	Fair	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Mr: Muskego	Good	Fair	Poor	Poor	Poor	Good	Good	Fair	Poor	Good.
NaD2: Negley	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
NaE: Negley	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Ne: Newark	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
OcA: Ockley	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OcB: Ockley	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Pa: Patton	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good.
Pb: Patton	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good.
Pe: Pewamo	Poor	Poor	Fair	Fair	Fair	Good	Good	Poor	Fair	Good.
Ph. Pits										
PkB: Pike	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
PkC2: Pike	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Ro: Rockmill	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Rp: Rockmill	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Rt: Rossburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Sc: Sebring	Fair	Fair	Good	Good	Good	Good	Good	Fair	Good	Good.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
SdD:										
Shelocta	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
SeE:										
Shelocta	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Berks	Very poor.	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
SfD:										
Shelocta	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Cruze	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
SfE:										
Shelocta	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Cruze	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Sh:										
Shoals	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
SkA:										
Sleeth	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
St:										
Stonelick	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
TaC2:										
Tarlton	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
ThA:										
Thackery	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
ThB:										
Thackery	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Ud, Uf, Ug. Udorthents										
Um:										
Urban land.										
Aetna	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
UoC:										
Urban land.										
Amanda	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
UrB:										
Urban land.										
Bennington	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
UtC:										
Urban land.										
Cardington	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
UuB:										
Urban land.										
Celina	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
UxB:										
Urban land.										
Ockley	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Uy:										
Urban land.										
Udorthents.										
WdA:										
Wea	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
WeC:										
Wellston	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
WfC:										
Wellston	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Cruze	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Wg:										
Westland	Fair	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Wk:										
Westland	Fair	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
ZnB:										
Zanesville	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
ZnC2:										
Zanesville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 17a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
AfB:				
Alford---------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
AfC2:				
Alford---------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ag:				
Aetna----------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ah:				
Aetna----------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
AmB:				
Amanda---------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
AmB2:				
Amanda---------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
AmC2:				
Amanda---------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
AmD2:				
Amanda---------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
AmE2:				
Amanda---------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
AoC3:				
Amanda---------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
AoD3:				
Amanda---------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
ApB2:				
Amanda--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Loudonville---------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
ApC2:				
Amanda--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Loudonville---------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
ApD2:				
Amanda--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Loudonville---------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
ArC2:				
Amanda--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ockley--------------	Fair		Fair	
	Thickest layer	0.88	Thickest layer	0.87
	Bottom layer	0.91	Bottom layer	0.87
ArD2:				
Amanda--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ockley--------------	Fair		Fair	
	Thickest layer	0.16	Thickest layer	0.87
	Bottom layer	0.91	Bottom layer	0.87
Bb:				
Beaucoup------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
BeA:				
Bennington----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
BeB:				
Bennington----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
BkF:				
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CaB:				
Cardington	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CaB2:				
Cardington	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CaC2:				
Cardington	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CaD2:				
Cardington	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Cb:				
Carlisle	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CdF:				
Cedarfalls	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Rock outcrop	Not rated		Not rated	
CeB:				
Celina	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CfB:				
Centerburg	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CfB2:				
Centerburg	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CfC2:				
Centerburg	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Cg:				
Chagrin	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.50
	Bottom layer	0.00	Bottom layer	0.50

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
CkC2:				
Cincinnati----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CmC2:				
Cincinnati----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Wellston------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Cn:				
Condit--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CoB:				
Corwin--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CrA:				
Crosby--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CsA:				
Canal---------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ee:				
Eel-----------------	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.89	Bottom layer	0.85
EkA:				
Eldean--------------	Good		Fair	
	Bottom layer	0.89	Thickest layer	0.85
	Thickest layer	0.00	Bottom layer	0.85
EkB:				
Eldean--------------	Good		Fair	
	Bottom layer	0.89	Thickest layer	0.85
	Thickest layer	0.00	Bottom layer	0.85
EnC2:				
Eldean--------------	Good		Fair	
	Bottom layer	0.89	Thickest layer	0.85
	Thickest layer	0.00	Bottom layer	0.85
Eu:				
Euclid--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
FbA:				
Fitchville----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FhA:				
Fox-----------------	Good		Fair	
	Bottom layer	0.93	Thickest layer	0.89
	Thickest layer	0.91	Bottom layer	0.89
FhB:				
Fox-----------------	Good		Fair	
	Bottom layer	0.93	Thickest layer	0.89
	Thickest layer	0.91	Bottom layer	0.89
FhC2:				
Fox-----------------	Good		Fair	
	Bottom layer	0.93	Thickest layer	0.89
	Thickest layer	0.91	Bottom layer	0.89
FhD2:				
Fox-----------------	Good		Fair	
	Bottom layer	0.93	Thickest layer	0.89
	Thickest layer	0.91	Bottom layer	0.89
FmA:				
Fox-----------------	Good		Fair	
	Bottom layer	0.93	Thickest layer	0.89
	Thickest layer	0.91	Bottom layer	0.89
FmB:				
Fox-----------------	Fair		Fair	
	Thickest layer	0.04	Thickest layer	0.89
	Bottom layer	0.93	Bottom layer	0.89
GaB:				
Gallman-------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GcD:				
Germano-------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GcE:				
Germano-------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GdF:				
Germano-------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Rock outcrop--------	Not rated		Not rated	
Gf:				
Gessie--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
Gg:				
Gessie	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GkC:				
Gilpin	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GkD:				
Gilpin	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GnB:				
Glenford	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GnC2:				
Glenford	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HhC2:				
Hickory	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HkE:				
Hickory	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Germano	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HmD2:				
Hickory	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Gilpin	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HnC2:				
Homewood	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HoD2:				
Homewood	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Gilpin	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
HoE2:				
Homewood------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Gilpin--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
JeB:				
Jeneva--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Km:				
Kokomo--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ko:				
Kokomo--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Lk:				
Lindside------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
LtC2:				
Loudonville---------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Steinsburg----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
LtD2:				
Loudonville---------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Steinsburg----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
LtE:				
Loudonville---------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Steinsburg----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
LtF:				
Loudonville---------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
LtF:				
Steinsburg----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ma:				
Marengo-------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Mb:				
Marengo-------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
McB:				
McGary--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Me:				
Medway--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
MkB2:				
Miamian-------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
MkC2:				
Miamian-------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
MmC3:				
Miamian-------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Thrifton------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
MmD3:				
Miamian-------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Thrifton------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Mo:				
Montgomery----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Mr:				
Muskego-------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
NaD2:				
Negley--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
NaE:				
Negley--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ne:				
Newark--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
OcA:				
Ockley--------------	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.91	Bottom layer	0.87
OcB:				
Ockley--------------	Fair		Fair	
	Thickest layer	0.16	Thickest layer	0.72
	Bottom layer	0.91	Bottom layer	0.87
Pa:				
Patton--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Pb:				
Patton--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Pe:				
Pewamo--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ph:				
Pits----------------	Not rated		Not rated	
PkB:				
Pike----------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
PkC2:				
Pike----------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ro:				
Rockmill------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Rp:				
Rockmill------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
Rt:				
Rossburg	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Sc:				
Sebring	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
SdD:				
Shelocta	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
SeE:				
Shelocta	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
SfD:				
Shelocta	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Cruze	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
SfE:				
Shelocta	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Cruze	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Sh:				
Shoals	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.50
SkA:				
Sleeth	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.95	Bottom layer	0.91
St:				
Stonelick	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.50
	Bottom layer	0.45	Bottom layer	0.50
TaC2:				
Tarlton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
ThA:				
Thackery------------	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.50	Bottom layer	0.41
ThB:				
Thackery------------	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.50	Bottom layer	0.41
Ud, Uf, Ug:				
Udorthents----------	Not rated		Not rated	
Um:				
Urban land----------	Not rated		Not rated	
Aetna---------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
UoC:				
Urban land----------	Not rated		Not rated	
Amanda--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
UrB:				
Urban land----------	Not rated		Not rated	
Bennington----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
UtC:				
Urban land----------	Not rated		Not rated	
Cardington----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
UuB:				
Urban land----------	Not rated		Not rated	
Celina--------------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
UxB:				
Urban land----------	Not rated		Not rated	
Ockley--------------	Good		Fair	
	Bottom layer	0.91	Thickest layer	0.87
	Thickest layer	0.00	Bottom layer	0.87
Uy:				
Urban land----------	Not rated		Not rated	
Udorthents----------	Not rated		Not rated	

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
WdA:				
Wea	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.95	Bottom layer	0.91
WeC:				
Wellston	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
WfC:				
Wellston	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Cruze	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Wg:				
Westland	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.91	Bottom layer	0.87
Wk:				
Westland	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.91	Bottom layer	0.87
ZnB:				
Zanesville	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
ZnC2:				
Zanesville	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

Table 17b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
AfB:						
Alford	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too acid	0.88
			Shrink-swell	0.98		
	Water erosion	0.68				
AfC2:						
Alford	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too acid	0.88
			Shrink-swell	0.87	Slope	0.96
	Water erosion	0.68				
Ag:						
Aetna	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.14
			Depth to saturated zone	0.14		
	Water erosion	0.99				
Ah:						
Aetna	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.14
			Depth to saturated zone	0.14		
	Water erosion	0.99				
AmB:						
Amanda	Fair		Fair		Fair	
	Low content of organic matter	0.08	Shrink-swell	0.98	Rock fragments	0.88
	Water erosion	0.99				
AmB2:						
Amanda	Fair		Fair		Fair	
	Low content of organic matter	0.18	Shrink-swell	0.87	Rock fragments	0.88
	Water erosion	0.99				
AmC2:						
Amanda	Fair		Fair		Fair	
	Low content of organic matter	0.75	Shrink-swell	0.91	Too acid	0.88
					Slope	0.96
	Water erosion	0.99				
AmD2:						
Amanda	Fair		Fair		Poor	
	Low content of organic matter	0.08	Slope	0.98	Slope	0.00
					Hard to reclaim	0.00
	Water erosion	0.99			Rock fragments	0.88
AmE2:						
Amanda	Fair		Poor		Poor	
	Low content of organic matter	0.08	Slope	0.00	Slope	0.00
					Hard to reclaim	0.54
	Water erosion	0.99			Rock fragments	0.88

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AoC3:						
Amanda	Fair		Good		Fair	
	Low content of organic matter	0.08			Hard to reclaim	0.10
	Water erosion	0.99			Rock fragments	0.88
					Slope	0.96
AoD3:						
Amanda	Fair		Fair		Poor	
	Low content of organic matter	0.08	Slope	0.98	Slope	0.00
	Too clayey	0.82			Too clayey	0.49
	Water erosion	0.99			Hard to reclaim	0.54
					Rock fragments	0.88
ApB2:						
Amanda	Fair		Fair		Fair	
	Low content of organic matter	0.18	Shrink-swell	0.94	Rock fragments	0.88
	Water erosion	0.99				
Loudonville	Fair		Poor		Fair	
	Low content of organic matter	0.75	Depth to bedrock	0.00	Too acid	0.98
	Droughty	0.99	Low strength	0.78	Depth to bedrock	0.99
	Depth to bedrock	0.99				
ApC2:						
Amanda	Fair		Fair		Fair	
	Low content of organic matter	0.18	Shrink-swell	0.87	Too acid	0.88
	Water erosion	0.99			Slope	0.96
Loudonville	Fair		Poor		Fair	
	Low content of organic matter	0.75	Depth to bedrock	0.00	Depth to bedrock	0.90
	Depth to bedrock	0.90	Low strength	0.78	Slope	0.96
	Droughty	0.99	Shrink-swell	0.87	Too acid	0.98
ApD2:						
Amanda	Fair		Fair		Poor	
	Low content of organic matter	0.08	Slope	0.98	Slope	0.00
	Water erosion	0.99			Hard to reclaim	0.54
					Rock fragments	0.88
Loudonville	Fair		Poor		Poor	
	Low content of organic matter	0.75	Depth to bedrock	0.00	Slope	0.00
	Droughty	0.82	Slope	0.98	Depth to bedrock	0.93
	Depth to bedrock	0.93			Too acid	0.98
ArC2:						
Amanda	Fair		Fair		Fair	
	Low content of organic matter	0.18	Shrink-swell	0.98	Rock fragments	0.88
	Water erosion	0.99			Slope	0.96
Ockley	Fair		Fair		Poor	
	Carbonate content	0.08	Shrink-swell	0.97	Hard to reclaim	0.00
	Low content of organic matter	0.88			Rock fragments	0.00
	Water erosion	0.99			Slope	0.96

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
ArD2:						
Amanda	Fair		Fair		Poor	
	Low content of organic matter	0.08	Slope	0.98	Slope	0.00
	Water erosion	0.99			Rock fragments	0.88
					Hard to reclaim	0.94
Ockley	Fair		Fair		Poor	
	Carbonate content	0.08	Slope	0.98	Hard to reclaim	0.00
	Low content of organic matter	0.12			Slope	0.00
	Water erosion	0.99				
Bb:						
Beaucoup	Fair		Poor		Poor	
	Too clayey	0.98	Depth to saturated zone	0.00	Depth to saturated zone	0.00
			Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
BeA:						
Bennington	Fair		Poor		Poor	
	Too clayey	0.02	Low strength	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.88	Depth to saturated zone	0.00	Too clayey	0.01
	Water erosion	0.90	Shrink-swell	0.97		
BeB:						
Bennington	Fair		Poor		Poor	
	Too clayey	0.08	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.08	Low strength	0.22	Too clayey	0.06
	Water erosion	0.90				
BkF:						
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Low content of organic matter	0.12	Slope	0.00	Rock fragments	0.00
	Depth to bedrock	0.16	Cobble content	0.99	Depth to bedrock	0.16
					Too acid	0.88
CaB:						
Cardington	Fair		Fair		Fair	
	Too clayey	0.02	Depth to saturated zone	0.76	Too clayey	0.01
	Low content of organic matter	0.08	Low strength	0.78	Depth to saturated zone	0.76
	Water erosion	0.99			Hard to reclaim	0.80
					Rock fragments	0.97
CaB2:						
Cardington	Fair		Fair		Fair	
	Too clayey	0.02	Depth to saturated zone	0.76	Too clayey	0.01
	Low content of organic matter	0.08	Low strength	0.78	Hard to reclaim	0.54
	Water erosion	0.99			Depth to saturated zone	0.76
					Rock fragments	0.97

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CaC2:						
Cardington----------	Fair		Fair		Fair	
	Too clayey	0.02	Depth to saturated zone	0.76	Too clayey	0.01
	Low content of organic matter	0.08	Low strength	0.78	Hard to reclaim	0.35
	Water erosion	0.99			Depth to saturated zone	0.76
					Slope	0.96
					Rock fragments	0.97
CaD2:						
Cardington----------	Fair		Fair		Poor	
	Too clayey	0.02	Depth to saturated zone	0.76	Slope	0.00
	Low content of organic matter	0.08	Low strength	0.78	Too clayey	0.01
	Water erosion	0.99	Slope	0.98	Hard to reclaim	0.54
					Depth to saturated zone	0.76
					Rock fragments	0.97
Cb:						
Carlisle-----------	Poor		Poor		Poor	
	Wind erosion	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
					Hard to reclaim	0.00
					Rock fragments	0.00
					Content of organic matter	0.00
CdF:						
Cedarfalls----------	Poor		Poor		Poor	
	Too sandy	0.00	Slope	0.00	Slope	0.00
	Low content of organic matter	0.08	Depth to bedrock	0.98	Too sandy	0.00
	Droughty	0.38			Hard to reclaim	0.12
	Too acid	0.50			Rock fragments	0.12
					Too acid	0.50
Rock outcrop--------	Not rated		Not rated		Not rated	
CeB:						
Celina--------------	Fair		Fair		Fair	
	Carbonate content	0.08	Depth to saturated zone	0.76	Too clayey	0.36
	Low content of organic matter	0.32			Depth to saturated zone	0.76
	Too clayey	0.50			Hard to reclaim	0.94
	Water erosion	0.99				
CfB:						
Centerburg----------	Fair		Fair		Poor	
	Low content of organic matter	0.18	Depth to saturated zone	0.14	Hard to reclaim	0.00
	Water erosion	0.99	Shrink-swell	0.97	Depth to saturated zone	0.14
					Rock fragments	0.88
CfB2:						
Centerburg----------	Fair		Fair		Fair	
	Low content of organic matter	0.08	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Water erosion	0.99			Hard to reclaim	0.71
					Rock fragments	0.97
					Too acid	0.98

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
CfC2:						
Centerburg----------	Fair		Fair		Poor	
	Low content of organic matter	0.08	Depth to saturated zone	0.14	Hard to reclaim	0.00
	Too clayey	0.82			Depth to saturated zone	0.14
	Water erosion	0.99			Too clayey	0.46
					Rock fragments	0.88
					Slope	0.96
Cg:						
Chagrin-------------	Fair		Good		Fair	
	Low content of organic matter	0.75			Rock fragments	0.97
CkC2:						
Cincinnati----------	Fair		Poor		Fair	
	Low content of organic matter	0.12	Depth to fragipan	0.00	Depth to fragipan	0.46
	Water erosion	0.37	Low strength	0.00	Hard to reclaim	0.54
	Depth to fragipan	0.46	Depth to saturated zone	0.89	Too acid	0.88
					Depth to saturated zone	0.89
					Slope	0.96
CmC2:						
Cincinnati----------	Fair		Poor		Fair	
	Low content of organic matter	0.12	Depth to fragipan	0.00	Hard to reclaim	0.03
	Water erosion	0.37	Low strength	0.00	Depth to fragipan	0.46
	Depth to fragipan	0.46	Depth to saturated zone	0.89	Depth to saturated zone	0.89
			Shrink-swell	0.97	Slope	0.96
					Rock fragments	0.97
Wellston------------	Fair		Poor		Fair	
	Low content of organic matter	0.75	Low strength	0.00	Rock fragments	0.88
	Too acid	0.82	Depth to bedrock	0.39	Slope	0.96
	Water erosion	0.99			Too acid	0.98
Cn:						
Condit--------------	Fair		Poor		Poor	
	Too clayey	0.50	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.88	Low strength	0.22	Too clayey	0.41
	Water erosion	0.99	Shrink-swell	0.87		
CoB:						
Corwin--------------	Fair		Fair		Fair	
	Low content of organic matter	0.50	Depth to saturated zone	0.53	Depth to saturated zone	0.53
	Carbonate content	0.97			Hard to reclaim	0.99
	Water erosion	0.99				
CrA:						
Crosby--------------	Fair		Poor		Poor	
	Carbonate content	0.08	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.12			Too clayey	0.36
	Too clayey	0.50			Hard to reclaim	0.99
	Water erosion	0.90				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
CsA:						
Canal---------------	Fair		Poor		Poor	
	Low content of organic matter	0.88	Low strength	0.00	Depth to saturated zone	0.00
	Water erosion	0.99	Depth to saturated zone	0.00		
			Shrink-swell	0.99		
Ee:						
Eel-----------------	Fair		Fair		Poor	
	Water erosion	0.90	Depth to saturated zone	0.32	Hard to reclaim	0.00
	Carbonate content	0.92			Depth to saturated zone	0.32
EkA:						
Eldean--------------	Poor		Good		Poor	
	Carbonate content	0.00			Hard to reclaim	0.00
	Too clayey	0.00			Too clayey	0.00
	Low content of organic matter	0.88			Rock fragments	0.50
	Water erosion	0.99				
	Droughty	0.99				
EkB:						
Eldean--------------	Poor		Fair		Poor	
	Carbonate content	0.00			Hard to reclaim	0.00
	Too clayey	0.00			Too clayey	0.00
	Low content of organic matter	0.88			Rock fragments	0.50
	Water erosion	0.99				
	Droughty	0.99				
EnC2:						
Eldean--------------	Poor		Good		Poor	
	Carbonate content	0.00			Hard to reclaim	0.00
	Too clayey	0.00			Too clayey	0.00
	Low content of organic matter	0.08			Rock fragments	0.50
	Droughty	0.98			Slope	0.96
	Water erosion	0.99				
Eu:						
Euclid--------------	Fair		Poor		Fair	
	Low content of organic matter	0.88	Low strength	0.00	Depth to saturated zone	0.29
	Water erosion	0.99	Depth to saturated zone	0.29		
FbA:						
Fitchville----------	Fair		Poor		Poor	
	Low content of organic matter	0.88	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Water erosion	0.99	Low strength	0.00	Too acid	0.98
			Shrink-swell	0.87		
FhA:						
Fox-----------------	Fair		Fair		Fair	
	Low content of organic matter	0.12			Hard to reclaim	0.18
					Rock fragments	0.28
	Too clayey	0.68			Too clayey	0.39
	Carbonate content	0.68			Carbonate content	0.80
	Water erosion	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
FhB:						
Fox	Fair		Good		Fair	
	Low content of organic matter	0.12			Hard to reclaim	0.18
	Too clayey	0.68			Rock fragments	0.28
	Carbonate content	0.68			Too clayey	0.39
	Water erosion	0.99			Carbonate content	0.80
FhC2:						
Fox	Fair		Good		Fair	
	Low content of organic matter	0.12			Hard to reclaim	0.18
	Carbonate content	0.68			Rock fragments	0.28
	Water erosion	0.99			Carbonate content	0.80
					Slope	0.96
FhD2:						
Fox	Fair		Fair		Poor	
	Low content of organic matter	0.12	Slope	0.98	Slope	0.00
	Carbonate content	0.68			Hard to reclaim	0.18
	Water erosion	0.90			Rock fragments	0.28
	Too clayey	0.99			Too clayey	0.58
					Carbonate content	0.80
FmA:						
Fox	Fair		Good		Fair	
	Low content of organic matter	0.12			Hard to reclaim	0.18
	Carbonate content	0.68			Rock fragments	0.28
	Water erosion	0.90			Carbonate content	0.80
FmB:						
Fox	Fair		Fair		Fair	
	Low content of organic matter	0.12			Hard to reclaim	0.18
	Carbonate content	0.68				
	Water erosion	0.90				
GaB:						
Gallman	Fair		Good		Fair	
	Low content of organic matter	0.75			Rock fragments	0.50
					Hard to reclaim	0.82
GcD:						
Germano	Fair		Poor		Poor	
	Droughty	0.08	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.35	Slope	0.50	Rock fragments	0.03
	Low content of organic matter	0.68			Depth to bedrock	0.35
GcE:						
Germano	Poor		Poor		Poor	
	Low content of organic matter	0.00	Depth to bedrock	0.00	Slope	0.00
			Slope	0.00	Rock fragments	0.00
	Droughty	0.32			Too acid	0.50
	Too acid	0.50			Depth to bedrock	0.99
	Depth to bedrock	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
GdF:						
Germano-------------	Poor		Poor		Poor	
	Low content of organic matter	0.00	Depth to bedrock	0.00	Slope	0.00
			Slope	0.00	Rock fragments	0.00
	Droughty	0.01			Depth to bedrock	0.71
	Depth to bedrock	0.71			Too acid	0.98
Rock outcrop--------	Not rated		Not rated		Not rated	
Gf:						
Gessie--------------	Fair		Good		Fair	
	Water erosion	0.90			Carbonate content	0.97
	Carbonate content	0.92				
Gg:						
Gessie--------------	Fair		Good		Fair	
	Water erosion	0.90			Carbonate content	0.97
	Carbonate content	0.92				
GkC:						
Gilpin--------------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
					Too acid	0.50
	Too acid	0.50			Slope	0.63
	Droughty	0.75			Depth to bedrock	0.93
	Depth to bedrock	0.93				
GkD:						
Gilpin--------------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
			Slope	0.50	Rock fragments	0.00
	Droughty	0.33			Depth to bedrock	0.46
	Depth to bedrock	0.46			Too acid	0.59
	Too acid	0.68				
GnB:						
Glenford------------	Fair		Poor		Fair	
	Low content of organic matter	0.32	Low strength	0.00	Depth to saturated zone	0.12
			Depth to saturated zone	0.12		
	Water erosion	0.90				
GnC2:						
Glenford------------	Fair		Poor		Fair	
	Low content of organic matter	0.32	Low strength	0.00	Depth to saturated zone	0.12
			Depth to saturated zone	0.12		
	Water erosion	0.90			Too clayey	0.62
	Too clayey	0.99			Slope	0.63
HhC2:						
Hickory-------------	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Rock fragments	0.72
			Shrink-swell	0.92	Slope	0.96
	Water erosion	0.99				
HkE:						
Hickory-------------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Slope	0.00	Slope	0.00
			Low strength	0.00	Rock fragments	0.88
	Water erosion	0.99	Shrink-swell	0.95		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
HkE:						
Germano	Fair		Poor		Poor	
	Droughty	0.36	Slope	0.00	Slope	0.00
	Too acid	0.50	Depth to bedrock	0.00	Hard to reclaim	0.00
	Low content of organic matter	0.68			Rock fragments	0.03
					Too acid	0.98
HmD2:						
Hickory	Fair		Poor		Poor	
	Low content of organic matter	0.12	Low strength	0.00	Slope	0.00
			Shrink-swell	0.95	Rock fragments	0.88
	Water erosion	0.99	Slope	0.98		
Gilpin	Fair		Poor		Poor	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
			Slope	0.98	Slope	0.00
	Droughty	0.13			Depth to bedrock	0.46
	Depth to bedrock	0.46			Too acid	0.50
	Too acid	0.50				
HnC2:						
Homewood	Fair		Poor		Fair	
	Depth to fragipan	0.14	Depth to fragipan	0.00	Hard to reclaim	0.03
	Low content of organic matter	0.24	Depth to saturated zone	0.76	Depth to fragipan	0.14
					Rock fragments	0.28
	Water erosion	0.99	Shrink-swell	0.96	Depth to saturated zone	0.76
					Too acid	0.88
HoD2:						
Homewood	Fair		Poor		Poor	
	Low content of organic matter	0.08	Depth to fragipan	0.00	Slope	0.00
			Depth to saturated zone	0.76	Depth to fragipan	0.14
	Depth to fragipan	0.14			Hard to reclaim	0.35
	Water erosion	0.99	Slope	0.98	Depth to saturated zone	0.76
			Shrink-swell	0.99		
					Too acid	0.88
Gilpin	Fair		Poor		Poor	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
			Slope	0.98	Rock fragments	0.00
	Droughty	0.33			Depth to bedrock	0.46
	Depth to bedrock	0.46			Too acid	0.50
	Too acid	0.50				
HoE2:						
Homewood	Fair		Poor		Poor	
	Low content of organic matter	0.08	Depth to fragipan	0.00	Slope	0.00
			Slope	0.00	Depth to fragipan	0.14
	Depth to fragipan	0.14	Depth to saturated zone	0.76	Hard to reclaim	0.20
	Water erosion	0.99			Depth to saturated zone	0.76
			Shrink-swell	0.99		
					Too acid	0.88
Gilpin	Fair		Poor		Poor	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
			Slope	0.00	Rock fragments	0.00
	Droughty	0.33			Depth to bedrock	0.46
	Depth to bedrock	0.46			Too acid	0.50
	Too acid	0.50				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
JeB:						
Jeneva--------------	Fair		Fair		Fair	
	Water erosion	0.99	Low strength	0.22	Depth to saturated zone	0.98
			Depth to saturated zone	0.98	Too acid	0.98
Km:						
Kokomo--------------	Poor		Poor		Poor	
	Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Carbonate content	0.68	Low strength	0.00	Too clayey	0.00
			Shrink-swell	0.87		
Ko:						
Kokomo--------------	Fair		Poor		Poor	
	Too clayey	0.08	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Carbonate content	0.68	Low strength	0.00	Too clayey	0.07
			Shrink-swell	0.95		
Lk:						
Lindside------------	Fair		Fair		Fair	
	Low content of organic matter	0.12	Depth to saturated zone	0.76	Depth to saturated zone	0.76
	Water erosion	0.99				
LtC2:						
Loudonville---------	Poor		Poor		Poor	
	Wind erosion	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Low content of organic matter	0.12			Depth to bedrock	0.90
					Slope	0.96
	Droughty	0.77			Too acid	0.98
	Depth to bedrock	0.90				
Steinsburg----------	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Low content of organic matter	0.12			Depth to bedrock	0.54
					Too acid	0.59
	Depth to bedrock	0.54			Slope	0.96
	Too acid	0.68				
LtD2:						
Loudonville---------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
			Slope	0.98	Rock fragments	0.00
	Droughty	0.57			Too clayey	0.58
	Depth to bedrock	0.93			Depth to bedrock	0.93
	Too clayey	0.99			Too acid	0.98
Steinsburg----------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
			Slope	0.98	Hard to reclaim	0.00
	Too acid	0.50			Rock fragments	0.12
	Droughty	0.55			Too acid	0.50
LtE:						
Loudonville---------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
			Slope	0.00	Rock fragments	0.00
	Droughty	0.58			Depth to bedrock	0.97
	Depth to bedrock	0.97			Too acid	0.98

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
LtE:						
Steinsburg----------	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Low content of organic matter	0.12	Slope	0.00	Rock fragments	0.00
	Too acid	0.50	Cobble content	0.82	Too acid	0.50
	Depth to bedrock	0.54			Depth to bedrock	0.54
LtF:						
Loudonville---------	Fair		Poor		Poor	
	Low content of organic matter	0.75	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.99	Slope	0.00	Too acid	0.98
			Low strength	0.78	Depth to bedrock	0.99
			Shrink-swell	0.87		
Steinsburg----------	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
	Low content of organic matter	0.12			Rock fragments	0.12
	Too acid	0.50			Too acid	0.50
Ma:						
Marengo-------------	Fair		Poor		Poor	
	Low content of organic matter	0.88	Depth to saturated zone	0.00	Depth to saturated zone	0.00
			Low strength	0.00		
			Shrink-swell	0.87		
Mb:						
Marengo-------------	Fair		Poor		Poor	
	Low content of organic matter	0.88	Depth to saturated zone	0.00	Depth to saturated zone	0.00
			Low strength	0.00		
			Shrink-swell	0.94		
McB:						
McGary--------------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.00
	Too clayey	0.50	Depth to saturated zone	0.00	Too clayey	0.33
	Water erosion	0.68	Shrink-swell	0.59		
	Carbonate content	0.68				
Me:						
Medway--------------	Fair		Fair		Fair	
	Low content of organic matter	0.32	Depth to saturated zone	0.76	Depth to saturated zone	0.76
					Rock fragments	0.97
MkB2:						
Miamian-------------	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Carbonate content	0.08			Hard to reclaim	0.71
	Low content of organic matter	0.18				
	Water erosion	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
MkC2:						
Miamian	Fair		Poor		Fair	
	Low content of organic matter	0.75	Low strength	0.00	Slope	0.96
	Water erosion	0.99	Shrink-swell	0.87		
MmC3:						
Miamian	Fair		Good		Fair	
	Carbonate content	0.08			Hard to reclaim	0.16
	Low content of organic matter	0.18			Slope	0.96
	Water erosion	0.99				
Thrifton	Fair		Fair		Poor	
	Carbonate content	0.08	Depth to saturated zone	0.91	Hard to reclaim	0.00
	Low content of organic matter	0.12			Carbonate content	0.08
					Rock fragments	0.72
					Depth to saturated zone	0.91
					Slope	0.96
MmD3:						
Miamian	Fair		Fair		Poor	
	Carbonate content	0.08	Slope	0.98	Slope	0.00
	Low content of organic matter	0.18			Hard to reclaim	0.29
	Water erosion	0.99				
Thrifton	Fair		Fair		Poor	
	Carbonate content	0.08	Depth to saturated zone	0.91	Hard to reclaim	0.00
	Low content of organic matter	0.12	Slope	0.98	Slope	0.00
					Carbonate content	0.08
					Rock fragments	0.72
					Depth to saturated zone	0.91
Mo:						
Montgomery	Poor		Poor		Poor	
	Too clayey	0.00	Depth to saturated zone	0.00	Too clayey	0.00
	Carbonate content	0.46	Low strength	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.50	Shrink-swell	0.15		
	Water erosion	0.99				
Mr:						
Muskego	Poor		Poor		Poor	
	Wind erosion	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Carbonate content	0.00	Low strength	0.22	Rock fragments	0.00
					Content of organic matter	0.00
NaD2:						
Negley	Fair		Fair		Poor	
	Low content of organic matter	0.12	Slope	0.98	Slope	0.00
					Rock fragments	0.00
					Hard to reclaim	0.92
					Too acid	0.98

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
NaE:						
Negley	Fair		Poor		Poor	
	Low content of organic matter	0.12	Slope	0.00	Slope	0.00
					Rock fragments	0.00
					Hard to reclaim	0.92
					Too acid	0.98
Ne:						
Newark	Fair		Poor		Poor	
	Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.00
	Water erosion	0.90	Depth to saturated zone	0.00		
OcA:						
Ockley	Fair		Fair		Poor	
	Carbonate content	0.08	Shrink-swell	0.95	Hard to reclaim	0.00
	Low content of organic matter	0.88			Rock fragments	0.00
	Too clayey	0.98			Too clayey	0.70
	Water erosion	0.99				
OcB:						
Ockley	Fair		Fair		Poor	
	Carbonate content	0.08	Shrink-swell	0.95	Hard to reclaim	0.00
	Low content of organic matter	0.88				
	Water erosion	0.99				
Pa:						
Patton	Fair		Poor		Poor	
	Water erosion	0.90	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too clayey	0.98	Low strength	0.00	Too clayey	0.93
			Shrink-swell	0.87		
Pb:						
Patton	Fair		Poor		Poor	
	Water erosion	0.90	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too clayey	0.98	Low strength	0.00	Too clayey	0.76
			Shrink-swell	0.87		
Pe:						
Pewamo	Poor		Poor		Poor	
	Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Carbonate content	0.80	Low strength	0.00	Too clayey	0.00
			Shrink-swell	0.87	Rock fragments	0.97
Ph:						
Pits	Not rated		Not rated		Not rated	
PkB:						
Pike	Fair		Fair		Fair	
	Low content of organic matter	0.12	Low strength	0.78	Too acid	0.88
	Water erosion	0.90	Shrink-swell	0.99		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
PkC2:						
Pike----------------	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too acid	0.88
			Shrink-swell	0.95	Slope	0.96
	Water erosion	0.90				
Ro:						
Rockmill------------	Good		Poor		Poor	
			Depth to saturated zone	0.00	Depth to saturated zone	0.00
					Hard to reclaim (rock fragments)	0.00
					Rock fragments	0.00
					Content of organic matter	0.00
Rp:						
Rockmill------------	Good		Poor		Poor	
			Depth to saturated zone	0.00	Depth to saturated zone	0.00
					Hard to reclaim (rock fragments)	0.00
					Rock fragments	0.00
					Content of organic matter	0.00
Rt:						
Rossburg------------	Fair		Good		Good	
	Carbonate content	0.92				
	Water erosion	0.99				
Sc:						
Sebring-------------	Fair		Poor		Poor	
	Low content of organic matter	0.32	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Water erosion	0.99	Low strength	0.00		
			Shrink-swell	0.87		
SdD:						
Shelocta------------	Good		Fair		Poor	
			Slope	0.50	Slope	0.00
					Rock fragments	0.03
					Too acid	0.88
					Hard to reclaim	0.98
SeE:						
Shelocta------------	Good		Poor		Poor	
			Slope	0.00	Slope	0.00
					Hard to reclaim	0.02
					Rock fragments	0.03
					Too acid	0.88
Berks---------------	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.10	Slope	0.00	Rock fragments	0.00
	Low content of organic matter	0.12			Depth to bedrock	0.10
					Too acid	0.92
SfD:						
Shelocta------------	Good		Fair		Poor	
			Slope	0.50	Slope	0.00
					Hard to reclaim	0.02
					Rock fragments	0.03
					Too acid	0.88

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
SfD:						
Cruze	Fair		Poor		Poor	
	Low content of organic matter	0.18	Low strength	0.00	Slope	0.00
			Shrink-swell	0.16	Rock fragments	0.28
	Too clayey	0.50	Slope	0.50	Too clayey	0.30
	Too acid	0.68	Depth to saturated zone	0.76	Too acid	0.59
	Water erosion	0.90			Depth to saturated zone	0.76
			Depth to bedrock	0.82		
SfE:						
Shelocta	Good		Poor		Poor	
			Slope	0.00	Slope	0.00
					Hard to reclaim	0.02
					Rock fragments	0.03
					Too acid	0.88
Cruze	Fair		Poor		Poor	
	Low content of organic matter	0.18	Slope	0.00	Slope	0.00
			Low strength	0.00	Rock fragments	0.28
	Too clayey	0.50	Shrink-swell	0.22	Too clayey	0.30
	Too acid	0.68	Depth to saturated zone	0.76	Too acid	0.59
	Water erosion	0.90			Depth to saturated zone	0.76
			Depth to bedrock	0.82		
Sh:						
Shoals	Good		Poor		Poor	
			Low strength	0.00	Depth to saturated zone	0.00
			Depth to saturated zone	0.00		
			Shrink-swell	0.96		
SkA:						
Sleeth	Fair		Poor		Poor	
	Carbonate content	0.01	Depth to saturated zone	0.00	Hard to reclaim	0.00
	Low content of organic matter	0.12			Depth to saturated zone	0.00
			Shrink-swell	0.92		
St:						
Stonelick	Fair		Good		Poor	
	Carbonate content	0.68			Rock fragments	0.00
	Low content of organic matter	0.75			Hard to reclaim	0.00
					Carbonate content	0.68
TaC2:						
Tarlton	Fair		Poor		Fair	
	Droughty	0.61	Depth to bedrock	0.00	Too clayey	0.47
	Too clayey	0.68	Low strength	0.00	Slope	0.63
	Low content of organic matter	0.75	Shrink-swell	0.46	Depth to saturated zone	0.76
			Depth to saturated zone	0.76		
	Depth to bedrock	0.84			Depth to bedrock	0.84
	Water erosion	0.99				
ThA:						
Thackery	Poor		Fair		Fair	
	Carbonate content	0.00	Low strength	0.78	Depth to saturated zone	0.98
	Low content of organic matter	0.88	Depth to saturated zone	0.98		
	Water erosion	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
ThB:						
Thackery------------	Poor		Fair		Poor	
	Carbonate content	0.00	Depth to saturated zone	0.98	Hard to reclaim	0.00
	Low content of organic matter	0.08			Rock fragments	0.88
	Water erosion	0.99			Depth to saturated zone	0.98
Ud, Uf, Ug:						
Udorthents----------	Not rated		Not rated		Not rated	
Um:						
Urban land----------	Not rated		Not rated		Not rated	
Aetna---------------	Fair		Poor		Fair	
	Low content of organic matter	0.88	Low strength	0.00	Depth to saturated zone	0.14
	Water erosion	0.99	Depth to saturated zone	0.14		
UoC:						
Urban land----------	Not rated		Not rated		Not rated	
Amanda--------------	Fair		Fair		Fair	
	Low content of organic matter	0.08	Shrink-swell	0.99	Rock fragments	0.88
	Water erosion	0.99				
UrB:						
Urban land----------	Not rated		Not rated		Not rated	
Bennington----------	Fair		Poor		Poor	
	Too clayey	0.08	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.08	Low strength	0.22	Too clayey	0.06
	Water erosion	0.90				
UtC:						
Urban land----------	Not rated		Not rated		Not rated	
Cardington----------	Fair		Fair		Fair	
	Too clayey	0.08	Depth to saturated zone	0.76	Too clayey	0.06
	Low content of organic matter	0.08	Low strength	0.78	Hard to reclaim	0.54
	Water erosion	0.99			Depth to saturated zone	0.76
					Rock fragments	0.97
UuB:						
Urban land----------	Not rated		Not rated		Not rated	
Celina--------------	Fair		Fair		Fair	
	Carbonate content	0.08	Depth to saturated zone	0.76	Hard to reclaim	0.35
	Low content of organic matter	0.32			Too clayey	0.66
	Too clayey	0.92			Depth to saturated zone	0.76
	Water erosion	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
UxB:						
Urban land	Not rated		Not rated		Not rated	
Ockley	Fair		Fair		Poor	
	Carbonate content	0.08	Shrink-swell	0.98	Hard to reclaim	0.00
	Low content of organic matter	0.12			Rock fragments	0.00
	Water erosion	0.99				
Uy:						
Urban land	Not rated		Not rated		Not rated	
Udorthents	Not rated		Not rated		Not rated	
WdA:						
Wea	Fair		Poor		Poor	
	Carbonate content	0.01	Low strength	0.00	Hard to reclaim	0.00
			Shrink-swell	0.91		
WeC:						
Wellston	Fair		Poor		Fair	
	Too acid	0.68	Low strength	0.00	Slope	0.63
	Low content of organic matter	0.75	Depth to bedrock	0.39	Rock fragments	0.88
					Too acid	0.98
	Water erosion	0.99				
WfC:						
Wellston	Fair		Poor		Fair	
	Too acid	0.68	Low strength	0.00	Hard to reclaim	0.32
	Low content of organic matter	0.75	Depth to bedrock	0.92	Slope	0.37
					Too clayey	0.69
	Water erosion	0.99			Rock fragments	0.88
	Too clayey	0.99			Too acid	0.98
Cruze	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.18	Depth to bedrock	0.16	Rock fragments	0.28
			Shrink-swell	0.21	Slope	0.37
	Too acid	0.68	Depth to saturated zone	0.76	Too acid	0.59
	Water erosion	0.90			Depth to saturated zone	0.76
Wg:						
Westland	Fair		Poor		Poor	
	Carbonate content	0.08	Depth to saturated zone	0.00	Depth to saturated zone	0.00
			Shrink-swell	0.92	Rock fragments	0.00
					Hard to reclaim	0.92
Wk:						
Westland	Fair		Poor		Poor	
	Carbonate content	0.08	Depth to saturated zone	0.00	Depth to saturated zone	0.00
					Rock fragments	0.00
					Hard to reclaim	0.92

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
ZnB:						
Zanesville----------	Fair		Poor		Fair	
	Depth to fragipan	0.74	Depth to fragipan	0.00	Depth to fragipan	0.74
	Water erosion	0.90	Low strength	0.00	Depth to saturated zone	0.89
			Depth to saturated zone	0.89	Too acid	0.98
ZnC2:						
Zanesville----------	Fair		Poor		Fair	
	Low content of organic matter	0.50	Depth to fragipan	0.00	Slope	0.63
	Depth to fragipan	0.74	Low strength	0.22	Depth to fragipan	0.74
	Water erosion	0.90	Depth to bedrock	0.74	Depth to saturated zone	0.89
			Depth to saturated zone	0.89	Too acid	0.98

Table 18a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AfB:						
Alford	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
AfC2:						
Alford	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
Ag:						
Aetna	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
Ah:						
Aetna	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
AmB:						
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47	Shrink-swell	0.50
					Slope	0.10
AmB2:						
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.47	Slope	0.10
AmC2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Depth to saturated zone	0.47	Shrink-swell	0.50
			Slope	0.04		
AmD2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to saturated zone	0.47		
AmE2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.47	Shrink-swell	0.50

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
AoC3:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47	Slope	1.00
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
AoD3:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.47	Shrink-swell	0.50
ApB2:						
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.47	Slope	0.10
Loudonville	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
ApC2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Depth to saturated zone	0.47	Shrink-swell	0.50
			Slope	0.04		
Loudonville	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
ApD2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.47	Shrink-swell	0.50
Loudonville	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
ArC2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Depth to saturated zone	0.47	Shrink-swell	0.50
			Slope	0.04		
Ockley	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
ArD2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.47	Shrink-swell	0.50

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
ArD2:						
Ockley	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
Bb:						
Beaucoup	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
BeA:						
Bennington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
BeB:						
Bennington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
					Slope	0.10
BkF:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
			Depth to soft bedrock	0.84		
CaB:						
Cardington	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.10			Slope	0.10
					Depth to saturated zone	0.10
CaB2:						
Cardington	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.10			Slope	0.10
					Depth to saturated zone	0.10
CaC2:						
Cardington	Somewhat limited		Very limited		Very limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.10	Slope	0.04	Shrink-swell	0.50
	Slope	0.04			Depth to saturated zone	0.10
CaD2:						
Cardington	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.10			Depth to saturated zone	0.10

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
Cb:						
Carlisle------------	Very limited		Very limited		Very limited	
	Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
CdF:						
Cedarfalls----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	0.02	Depth to bedrock	0.02	Depth to bedrock	0.02
Rock outcrop--------	Not rated		Not rated		Not rated	
CeB:						
Celina--------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.10			Slope	0.10
					Depth to saturated zone	0.10
CfB:						
Centerburg----------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
CfB2:						
Centerburg----------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50			Shrink-swell	0.50
					Slope	0.10
CfC2:						
Centerburg----------	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Slope	0.04	Depth to saturated zone	0.99
Cg:						
Chagrin-------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.15		
CkC2:						
Cincinnati----------	Somewhat limited		Very limited		Very limited	
	Slope	0.04	Depth to saturated zone	1.00	Slope	1.00
			Shrink-swell	0.50		
			Slope	0.04		

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
CmC2:						
Cincinnati----------	Somewhat limited		Very limited		Very limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Shrink-swell	0.50	Shrink-swell	0.50
			Slope	0.04		
Wellston------------	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.61	Depth to bedrock	0.61	Slope	1.00
	Slope	0.04	Slope	0.04	Depth to bedrock	0.61
Cn:						
Condit--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
CoB:						
Corwin--------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.44			Depth to saturated zone	0.44
					Slope	0.10
CrA:						
Crosby--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
CsA:						
Canal---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Ee:						
Eel-----------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.80	Depth to saturated zone	1.00	Depth to saturated zone	0.80
EkA:						
Eldean--------------	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
EkB:						
Eldean--------------	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
					Slope	0.10
EnC2:						
Eldean--------------	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Slope	0.04	Slope	1.00
	Slope	0.04			Shrink-swell	0.50
Eu:						
Euclid--------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.84	Depth to saturated zone	1.00	Depth to saturated zone	0.84

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
FbA:						
Fitchville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
FhA:						
Fox	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
FhB:						
Fox	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
					Slope	0.10
FhC2:						
Fox	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Slope	0.04	Slope	1.00
	Slope	0.04			Shrink-swell	0.50
FhD2:						
Fox	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
FmA:						
Fox	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
FmB:						
Fox	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
					Slope	0.10
GaB:						
Gallman	Not limited		Not limited		Somewhat limited	
					Slope	0.10
GcD:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
			Depth to soft bedrock	0.64		
GcE:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	0.61	Depth to bedrock	0.61	Depth to bedrock	0.61
			Depth to soft bedrock	0.01		
GdF:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
			Depth to soft bedrock	0.29		
Rock outcrop	Not rated		Not rated		Not rated	

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
Gf:						
Gessie	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
Gg:						
Gessie	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
GkC:						
Gilpin	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.37	Slope	0.37	Slope	1.00
GkD:						
Gilpin	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
GnB:						
Glenford	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
					Slope	0.10
GnC2:						
Glenford	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.37	Slope	0.37	Depth to saturated zone	1.00
HhC2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
HkE:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	0.93	Depth to bedrock	0.93	Depth to bedrock	0.93
HmD2:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Gilpin	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
HnC2:						
Homewood	Somewhat limited		Very limited		Very limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.10	Shrink-swell	0.50	Shrink-swell	0.50
	Slope	0.04	Slope	0.04	Depth to saturated zone	0.10

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
HoD2:						
Homewood	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.10			Depth to saturated zone	0.10
Gilpin	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
HoE2:						
Homewood	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.10			Depth to saturated zone	0.10
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
JeB:						
Jeneva	Not limited		Somewhat limited		Somewhat limited	
			Depth to saturated zone	0.99	Slope	0.10
Km:						
Kokomo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Ko:						
Kokomo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Lk:						
Lindside	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.10	Depth to saturated zone	1.00	Depth to saturated zone	0.10
LtC2:						
Loudonville	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.04	Slope	0.04	Slope	1.00
Steinsburg	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.04	Slope	0.04	Slope	1.00
LtD2:						
Loudonville	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
LtD2:						
Steinsburg----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
LtE:						
Loudonville---------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Steinsburg----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
LtF:						
Loudonville---------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Steinsburg----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Ma:						
Marengo-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Mb:						
Marengo-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
McB:						
McGary--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
					Slope	0.10
Me:						
Medway--------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.10	Depth to saturated zone	1.00	Depth to saturated zone	0.10
MkB2:						
Miamian-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.95	Shrink-swell	0.50
					Slope	0.10

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MkC2:						
Miamian-------------	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Depth to saturated zone	0.95	Slope	1.00
	Slope	0.04	Shrink-swell	0.50	Shrink-swell	0.50
			Slope	0.04		
MmC3:						
Miamian-------------	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Depth to saturated zone	0.95	Slope	1.00
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
Thrifton------------	Somewhat limited		Very limited		Very limited	
	Slope	0.04	Depth to saturated zone	1.00	Slope	1.00
			Slope	0.04		
MmD3:						
Miamian-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.95	Shrink-swell	0.50
Thrifton------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to saturated zone	1.00		
Mo:						
Montgomery----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Mr:						
Muskego-------------	Very limited		Very limited		Very limited	
	Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
			Shrink-swell	0.50		
NaD2:						
Negley--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
NaE:						
Negley--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Ne:						
Newark--------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
OcA:						
Ockley	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
OcB:						
Ockley	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
Pa:						
Patton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Pb:						
Patton	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Pe:						
Pewamo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Ph:						
Pits	Not rated		Not rated		Not rated	
PkB:						
Pike	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
PkC2:						
Pike	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
Ro:						
Rockmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Rp:						
Rockmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
Rt:						
Rossburg	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
Sc:						
Sebring	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
SdD:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
SeE:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
			Depth to soft bedrock	0.90		
SfD:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Cruze	Very limited		Very limited		Very limited	
	Slippage	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Shrink-swell	1.00	Slippage	1.00
	Shrink-swell	1.00	Slippage	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.10	Slope	1.00	Depth to saturated zone	0.10
SfE:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Cruze	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slippage	1.00	Depth to saturated zone	1.00	Slippage	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.10	Slippage	1.00	Depth to saturated zone	0.10
Sh:						
Shoals	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
SkA:						
Sleeth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
St:						
Stonelick	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
TaC2:						
Tarlton	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Slope	0.37	Depth to bedrock	1.00	Slope	1.00
	Depth to saturated zone	0.10	Slope	0.37	Depth to saturated zone	0.10
			Depth to soft bedrock	0.15		
ThA:						
Thackery	Not limited		Somewhat limited		Not limited	
			Depth to saturated zone	0.99		
ThB:						
Thackery	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
					Slope	0.10
Ud, Uf, Ug:						
Udorthents	Not rated		Not rated		Not rated	
Um:						
Urban land	Not rated		Not rated		Not rated	
Aetna	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
UoC:						
Urban land	Not rated		Not rated		Not rated	
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47	Slope	0.90
					Shrink-swell	0.50
UrB:						
Urban land	Not rated		Not rated		Not rated	
Bennington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
UtC:						
Urban land	Not rated		Not rated		Not rated	
Cardington	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	0.90
	Depth to saturated zone	0.10			Shrink-swell	0.50
					Depth to saturated zone	0.10

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
UuB:						
Urban land	Not rated		Not rated		Not rated	
Celina	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.10			Depth to saturated zone	0.10
UxB:						
Urban land	Not rated		Not rated		Not rated	
Ockley	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
Uy:						
Urban land	Not rated		Not rated		Not rated	
Udorthents	Not rated		Not rated		Not rated	
WdA:						
Wea	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
WeC:						
Wellston	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.61	Depth to bedrock	0.61	Slope	1.00
	Slope	0.37	Slope	0.37	Depth to bedrock	0.61
WfC:						
Wellston	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
	Depth to bedrock	0.08	Depth to bedrock	0.08	Depth to bedrock	0.08
Cruze	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Slope	0.63	Shrink-swell	1.00	Slope	1.00
	Depth to saturated zone	0.10	Slope	0.63	Depth to saturated zone	0.10
Wg:						
Westland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Wk:						
Westland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
ZnB:						
Zanesville	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Slope	0.10

Table 18a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ZnC2:						
Zanesville----------	Somewhat limited		Very limited		Very limited	
	Slope	0.37	Depth to saturated zone	1.00	Slope	1.00
			Slope	0.37		

Table 18b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AfB:						
Alford	Very limited		Not limited		Not limited	
	Frost action	1.00				
	Low strength	1.00				
	Shrink-swell	0.50				
AfC2:						
Alford	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.04	Slope	0.04
	Low strength	1.00				
	Shrink-swell	0.50				
	Slope	0.04				
Ag:						
Aetna	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00				
	Depth to saturated zone	0.75				
Ah:						
Aetna	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00				
	Depth to saturated zone	0.75				
AmB:						
Amanda	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50				
	Low strength	0.05				
AmB2:						
Amanda	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50				
	Low strength	0.05				
AmC2:						
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Low strength	0.50	Depth to saturated zone	0.47	Slope	0.04
	Shrink-swell	0.50	Slope	0.04		
	Frost action	0.50				
	Slope	0.04				
AmD2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Depth to saturated zone	0.47		

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
AmE2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50				
	Low strength	0.05				
AoC3:						
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Low strength	0.05				
	Slope	0.04				
AoD3:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50				
	Low strength	0.05				
ApB2:						
Amanda	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50				
	Low strength	0.05				
Loudonville	Very limited		Very limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.01
	Shrink-swell	0.50				
	Frost action	0.50				
	Low strength	0.28				
ApC2:						
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Low strength	0.50	Depth to saturated zone	0.47	Slope	0.04
	Shrink-swell	0.50	Slope	0.04		
	Frost action	0.50				
	Slope	0.04				
Loudonville	Very limited		Very limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.10
	Shrink-swell	0.50	Slope	0.04	Slope	0.04
	Frost action	0.50				
	Low strength	0.28				
	Slope	0.04				
ApD2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50				
	Low strength	0.05				
Loudonville	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	0.06
	Frost action	0.50				

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
ArC2:						
Amanda--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Low strength	0.05				
	Slope	0.04				
Ockley--------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Cutbanks cave	1.00	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Slope	0.04				
ArD2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50				
	Low strength	0.05				
Ockley--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Low strength	1.00	Slope	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
Bb:						
Beaucoup------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Flooding	0.60	Flooding	0.60
	Frost action	1.00				
	Ponding	1.00				
BeA:						
Bennington----------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00				
	Depth to saturated zone	1.00				
	Shrink-swell	0.50				
BeB:						
Bennington----------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00				
	Depth to saturated zone	1.00				
	Shrink-swell	0.50				
BkF:						
Berks---------------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Droughty	1.00
			Depth to soft bedrock	0.84	Depth to bedrock	0.84
					Gravel content	0.39
					Content of large stones	0.32

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
CaB:						
Cardington----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
	Low strength	1.00				
	Shrink-swell	0.50				
	Depth to saturated zone	0.03				
CaB2:						
Cardington----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
	Low strength	1.00				
	Shrink-swell	0.50				
	Depth to saturated zone	0.03				
CaC2:						
Cardington----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.04
	Low strength	1.00	Slope	0.04	Depth to saturated zone	0.03
	Shrink-swell	0.50				
	Slope	0.04				
	Depth to saturated zone	0.03				
CaD2:						
Cardington----------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to saturated zone	0.03
	Low strength	1.00				
	Shrink-swell	0.50				
	Depth to saturated zone	0.03				
Cb:						
Carlisle------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Content of organic matter	1.00
	Subsidence	1.00	Content of organic matter	1.00	Gravel content	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Frost action	1.00			Ponding	1.00
CdF:						
Cedarfalls----------	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Depth to bedrock	0.02	Slope	1.00	Droughty	0.32
			Depth to bedrock	0.02		
Rock outcrop--------	Not rated		Not rated		Not rated	
CeB:						
Celina--------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
	Low strength	1.00				
	Shrink-swell	0.50				
	Depth to saturated zone	0.03				

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
CfB:						
Centerburg----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
CfB2:						
Centerburg----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
CfC2:						
Centerburg----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Slope	0.04	Slope	0.04
	Slope	0.04				
Cg:						
Chagrin-------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
	Frost action	0.50	Flooding	0.80		
			Depth to saturated zone	0.15		
CkC2:						
Cincinnati----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.04
	Low strength	0.90				
	Slope	0.04	Slope	0.04		
CmC2:						
Cincinnati----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.04
	Low strength	1.00				
	Shrink-swell	0.50	Slope	0.04		
	Slope	0.04				
Wellston------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to bedrock	0.61	Slope	0.04
	Low strength	0.90	Slope	0.04		
	Depth to bedrock	0.61				
	Slope	0.04				
Cn:						
Condit--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00				
	Ponding	1.00				
	Shrink-swell	0.50				

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
CoB:						
Corwin-------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Shrink-swell	0.50				
	Frost action	0.50				
	Depth to saturated zone	0.19				
CrA:						
Crosby-------------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00				
	Depth to saturated zone	1.00				
	Shrink-swell	0.50				
CsA:						
Canal--------------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Too clayey	0.50		
	Low strength	0.50				
Ee:						
Eel----------------	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
	Frost action	1.00	Flooding	0.60	Depth to saturated zone	0.43
	Low strength	1.00				
	Depth to saturated zone	0.43				
EkA:						
Eldean-------------	Very limited		Very limited		Very limited	
	Low strength	1.00	Cutbanks cave	1.00	Carbonate content	1.00
	Shrink-swell	0.50	Too clayey	0.50		
	Frost action	0.50				
EkB:						
Eldean-------------	Very limited		Very limited		Very limited	
	Low strength	1.00	Cutbanks cave	1.00	Carbonate content	1.00
	Shrink-swell	0.50	Too clayey	0.50		
	Frost action	0.50				
EnC2:						
Eldean-------------	Very limited		Very limited		Very limited	
	Low strength	1.00	Cutbanks cave	1.00	Carbonate content	1.00
	Shrink-swell	0.50	Too clayey	0.50	Slope	0.04
	Frost action	0.50	Slope	0.04	Gravel content	0.04
	Slope	0.04			Content of large stones	0.01
Eu:						
Euclid-------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.48
	Low strength	0.90				
	Depth to saturated zone	0.48				
	Flooding	0.40				

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FbA:						
Fitchville----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00				
	Low strength	1.00				
	Shrink-swell	0.50				
FhA:						
Fox-----------------	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
FhB:						
Fox-----------------	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
FhC2:						
Fox-----------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Cutbanks cave	1.00	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Slope	0.04				
FhD2:						
Fox-----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	1.00		
	Frost action	0.50				
FmA:						
Fox-----------------	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
FmB:						
Fox-----------------	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
GaB:						
Gallman-------------	Somewhat limited		Not limited		Not limited	
	Frost action	0.50				
GcD:						
Germano-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.65
	Frost action	0.50	Depth to soft bedrock	0.64	Droughty	0.09
					Content of large stones	0.01
GcE:						
Germano-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	0.61	Depth to bedrock	0.61	Depth to bedrock	0.01
	Frost action	0.50	Depth to soft bedrock	0.01	Content of large stones	0.01

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
GdF:						
Germano-------------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Droughty	0.37
	Frost action	0.50	Depth to soft bedrock	0.29	Depth to bedrock	0.29
					Content of large stones	0.01
Rock outcrop--------	Not rated		Not rated		Not rated	
Gf:						
Gessie--------------	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
	Frost action	0.50	Flooding	0.60		
	Low strength	0.05				
Gg:						
Gessie--------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
	Frost action	0.50	Flooding	0.80		
	Low strength	0.05				
GkC:						
Gilpin--------------	Very limited		Very limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	0.37
	Frost action	0.50	Slope	0.37	Depth to bedrock	0.06
	Slope	0.37				
GkD:						
Gilpin--------------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	0.54
	Frost action	0.50				
GnB:						
Glenford------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
	Low strength	1.00				
	Depth to saturated zone	0.78				
	Shrink-swell	0.50				
GnC2:						
Glenford------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
	Low strength	0.90	Slope	0.37	Slope	0.37
	Depth to saturated zone	0.78				
	Slope	0.37				
HhC2:						
Hickory-------------	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Slope	0.04	Slope	0.04
	Shrink-swell	0.50				
	Frost action	0.50				
	Slope	0.04				

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
HkE:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00				
	Shrink-swell	0.50				
	Frost action	0.50				
Germano-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Depth to bedrock	0.93	Slope	1.00	Content of large stones	0.01
	Frost action	0.50	Depth to bedrock	0.93		
HmD2:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00				
	Shrink-swell	0.50				
	Frost action	0.50				
Gilpin--------------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	0.54
	Frost action	0.50			Droughty	0.03
HnC2:						
Homewood------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	0.04
	Frost action	0.50	Slope	0.04	Depth to saturated zone	0.03
	Slope	0.04				
	Depth to saturated zone	0.03				
HoD2:						
Homewood------------	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	1.00	Depth to saturated zone	0.03
	Frost action	0.50				
	Low strength	0.05				
	Depth to saturated zone	0.03				
Gilpin--------------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	0.54
	Frost action	0.50				
HoE2:						
Homewood------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.03
	Frost action	0.50				
	Low strength	0.05				
	Depth to saturated zone	0.03				
Gilpin--------------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	0.54
	Frost action	0.50				

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
JeB:						
Jeneva--------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	0.50				
Km:						
Kokomo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Too clayey	0.50		
	Ponding	1.00				
	Shrink-swell	0.50				
Ko:						
Kokomo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00				
	Ponding	1.00				
	Shrink-swell	0.50				
Lk:						
Lindside------------	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
	Frost action	1.00	Flooding	0.60	Depth to saturated zone	0.03
	Low strength	0.28				
	Depth to saturated zone	0.03				
LtC2:						
Loudonville---------	Very limited		Very limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.10
	Frost action	0.50	Slope	0.04	Slope	0.04
	Slope	0.04				
Steinsburg----------	Very limited		Very limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Droughty	0.54
	Frost action	0.50	Slope	0.04	Depth to bedrock	0.46
	Slope	0.04			Slope	0.04
LtD2:						
Loudonville---------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	0.06
	Frost action	0.50				
Steinsburg----------	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Depth to bedrock	1.00	Slope	1.00		
	Frost action	0.50	Depth to bedrock	1.00		
LtE:						
Loudonville---------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	0.03
	Frost action	0.50				

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
LtE:						
Steinsburg----------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Droughty	1.00
	Frost action	0.50			Depth to bedrock	0.46
					Content of large stones	0.03
LtF:						
Loudonville---------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	0.01
	Shrink-swell	0.50				
	Frost action	0.50				
	Low strength	0.28				
Steinsburg----------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50			Droughty	0.97
Ma:						
Marengo-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00				
	Ponding	1.00				
	Shrink-swell	0.50				
Mb:						
Marengo-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00				
	Ponding	1.00				
	Shrink-swell	0.50				
McB:						
McGary--------------	Very limited		Very limited		Very limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Too clayey	0.50		
	Shrink-swell	1.00				
	Depth to saturated zone	1.00				
Me:						
Medway--------------	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
	Low strength	0.90	Flooding	0.60		
	Depth to saturated zone	0.03				
MkB2:						
Miamian-------------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.95		
	Frost action	0.50	Too clayey	0.50		
	Shrink-swell	0.50				

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
MkC2:						
Miamian	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	0.95	Slope	0.04
	Shrink-swell	0.50	Slope	0.04		
	Frost action	0.50				
	Slope	0.04				
MmC3:						
Miamian	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	0.95	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Shrink-swell	0.50				
	Slope	0.04				
Thrifton	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Depth to saturated zone	1.00	Slope	0.04
	Slope	0.04	Slope	0.04		
MmD3:						
Miamian	Very limited		Very limited		Very limited	
	Low strength	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	0.95		
	Shrink-swell	0.50				
	Frost action	0.50				
Thrifton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Depth to saturated zone	1.00		
Mo:						
Montgomery	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00	Ponding	1.00	Ponding	1.00
	Frost action	1.00	Too clayey	0.50		
	Shrink-swell	1.00				
	Ponding	1.00				
Mr:						
Muskego	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Carbonate content	1.00
					Gravel content	1.00
	Subsidence	1.00	Content of organic matter	1.00	Depth to saturated zone	1.00
	Ponding	1.00				
	Frost action	1.00	Ponding	1.00	Ponding	1.00
NaD2:						
Negley	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50				
NaE:						
Negley	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50				

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
Ne:						
Newark	Very limited		Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Depth to saturated zone	1.00				
	Low strength	0.90				
OcA:						
Ockley	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
OcB:						
Ockley	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
Pa:						
Patton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00	Ponding	1.00	Ponding	1.00
	Frost action	1.00				
	Ponding	1.00				
	Shrink-swell	0.50				
Pb:						
Patton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00	Ponding	1.00	Ponding	1.00
	Frost action	1.00				
	Ponding	1.00				
	Shrink-swell	0.50				
Pe:						
Pewamo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00	Ponding	1.00	Ponding	1.00
	Frost action	1.00	Too clayey	0.50		
	Ponding	1.00				
	Shrink-swell	0.50				
Ph:						
Pits	Not rated		Not rated		Not rated	
PkB:						
Pike	Very limited		Not limited		Not limited	
	Frost action	1.00				
	Low strength	1.00				
	Shrink-swell	0.50				
PkC2:						
Pike	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.04	Slope	0.04
	Low strength	1.00				
	Shrink-swell	0.50				
	Slope	0.04				

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ro:						
Rockmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Content of organic matter	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00		
Rp:						
Rockmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Frost action	1.00	Content of organic matter	1.00	Flooding	0.60
	Ponding	1.00	Flooding	0.60		
Rt:						
Rossburg	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Frost action	0.50				
Sc:						
Sebring	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00				
	Ponding	1.00				
	Shrink-swell	0.50				
SdD:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50				
SeE:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50				
Berks	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Droughty	1.00
			Depth to soft bedrock	0.90	Depth to bedrock	0.90
SfD:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50				
Cruze	Very limited		Very limited		Very limited	
	Slippage	1.00	Slippage	1.00	Slope	1.00
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
	Low strength	1.00	Slope	1.00		
	Slope	1.00	Too clayey	0.50		
	Shrink-swell	1.00				

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
SfE:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50				
Cruze	Very limited		Very limited		Very limited	
	Slippage	1.00	Slippage	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to saturated zone	0.03
	Frost action	1.00	Depth to saturated zone	1.00		
	Low strength	1.00				
	Shrink-swell	1.00	Too clayey	0.50		
Sh:						
Shoals	Very limited		Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00				
	Low strength	1.00	Flooding	0.60	Flooding	0.60
	Depth to saturated zone	1.00				
	Shrink-swell	0.50				
SkA:						
Sleeth	Very limited		Very limited		Very limited	
	Frost action	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
	Low strength	0.50	Depth to dense layer	0.50		
	Shrink-swell	0.50				
St:						
Stonelick	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
	Frost action	0.50	Flooding	0.60		
TaC2:						
Tarlton	Very limited		Very limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	0.37
	Frost action	1.00	Depth to saturated zone	1.00	Depth to bedrock	0.16
	Shrink-swell	1.00			Depth to saturated zone	0.03
	Low strength	1.00	Too clayey	0.50		
	Slope	0.37	Slope	0.37		
			Depth to soft bedrock	0.15		
ThA:						
Thackery	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	0.28				
ThB:						
Thackery	Very limited		Very limited		Very limited	
	Frost action	1.00	Cutbanks cave	1.00	Carbonate content	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99		
	Low strength	0.28				
Ud, Uf, Ug:						
Udorthents	Not rated		Not rated		Not rated	
Um:						
Urban land	Not rated		Not rated		Not rated	

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
Um:						
Aetna	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00				
	Depth to saturated zone	0.75				
UoC:						
Urban land	Not rated		Not rated		Not rated	
Amanda	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50				
	Low strength	0.05				
UrB:						
Urban land	Not rated		Not rated		Not rated	
Bennington	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00				
	Depth to saturated zone	1.00				
	Shrink-swell	0.50				
UtC:						
Urban land	Not rated		Not rated		Not rated	
Cardington	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
	Low strength	1.00				
	Shrink-swell	0.50				
	Depth to saturated zone	0.03				
UuB:						
Urban land	Not rated		Not rated		Not rated	
Celina	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
	Low strength	1.00				
	Shrink-swell	0.50				
	Depth to saturated zone	0.03				
UxB:						
Urban land	Not rated		Not rated		Not rated	
Ockley	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
Uy:						
Urban land	Not rated		Not rated		Not rated	
Udorthents	Not rated		Not rated		Not rated	

Table 18b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
WdA:						
Wea	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
WeC:						
Wellston	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to bedrock	0.61	Slope	0.37
	Low strength	0.90	Slope	0.37		
	Depth to bedrock	0.61				
	Slope	0.37				
WfC:						
Wellston	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.63	Slope	0.63
	Low strength	0.90	Depth to bedrock	0.08		
	Slope	0.63				
	Depth to bedrock	0.08				
Cruze	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.63
	Low strength	1.00			Depth to saturated zone	0.03
	Shrink-swell	1.00	Slope	0.63		
	Slope	0.63	Too clayey	0.50		
	Depth to saturated zone	0.03				
Wg:						
Westland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00				
	Shrink-swell	0.50				
Wk:						
Westland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00				
	Shrink-swell	0.50				
ZnB:						
Zanesville	Very limited		Very limited		Not limited	
	Frost action	1.00	Depth to saturated zone	1.00		
	Low strength	1.00				
ZnC2:						
Zanesville	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.37
	Low strength	0.50				
	Slope	0.37	Slope	0.37		

Table 19a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
AfB:				
Alford	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.32
AfC2:				
Alford	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
	Slope	0.04		
Ag:				
Aetna	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
			Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53
Ah:				
Aetna	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
			Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53
AmB:				
Amanda	Very limited		Somewhat limited	
	Restricted permeability	1.00	Seepage	0.53
			Depth to saturated zone	0.39
	Depth to saturated zone	0.94		
			Slope	0.32
AmB2:				
Amanda	Very limited		Somewhat limited	
	Restricted permeability	1.00	Seepage	0.53
			Depth to saturated zone	0.39
	Depth to saturated zone	0.94		
			Slope	0.32
AmC2:				
Amanda	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	0.94	Depth to saturated zone	0.39
	Slope	0.04		

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
AmD2:				
Amanda--------------	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
	Depth to saturated zone	0.94	Depth to saturated zone	0.39
AmE2:				
Amanda--------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
	Depth to saturated zone	0.94	Depth to saturated zone	0.39
AoC3:				
Amanda--------------	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Depth to saturated zone	0.94	Seepage	0.53
	Slope	0.04	Depth to saturated zone	0.39
AoD3:				
Amanda--------------	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
	Depth to saturated zone	0.94	Depth to saturated zone	0.39
ApB2:				
Amanda--------------	Very limited		Somewhat limited	
	Restricted permeability	1.00	Seepage	0.53
	Depth to saturated zone	0.94	Depth to saturated zone	0.39
			Slope	0.32
Loudonville---------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Seepage	0.53
			Slope	0.32
ApC2:				
Amanda--------------	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Depth to saturated zone	0.94	Seepage	0.53
	Slope	0.04	Depth to saturated zone	0.39
Loudonville---------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	0.04	Seepage	0.53

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
ApD2:				
Amanda--------------	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
	Depth to saturated zone	0.94	Depth to saturated zone	0.39
Loudonville---------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
ArC2:				
Amanda--------------	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Depth to saturated zone	0.94	Seepage	0.53
	Slope	0.04	Depth to saturated zone	0.39
Ockley--------------	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Slope	0.04	Slope	1.00
ArD2:				
Amanda--------------	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
	Depth to saturated zone	0.94	Depth to saturated zone	0.39
Ockley--------------	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
	Slope	1.00	Seepage	1.00
	Restricted permeability	0.46		
Bb:				
Beaucoup------------	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Restricted permeability	1.00	Ponding	1.00
	Ponding	1.00		
BeA:				
Bennington----------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
BeB:				
Bennington----------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.32
BkF:				
Berks---------------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slope	1.00	Slope	1.00
			Seepage	1.00
CaB:				
Cardington----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.32
CaB2:				
Cardington----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.32
CaC2:				
Cardington----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	0.04		
CaD2:				
Cardington----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00		
Cb:				
Carlisle------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Subsidence	1.00	Content of organic matter	1.00
	Ponding	1.00	Seepage	1.00
			Ponding	1.00

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
CdF:				
Cedarfalls	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Filtering capacity	1.00	Seepage	1.00
	Slope	1.00	Depth to bedrock	0.02
	Depth to bedrock	0.41		
Rock outcrop	Not rated		Not rated	
CeB:				
Celina	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.32
CfB:				
Centerburg	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
			Slope	0.32
CfB2:				
Centerburg	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
			Slope	0.32
CfC2:				
Centerburg	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	0.04		
Cg:				
Chagrin	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.40		
CkC2:				
Cincinnati	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.53
	Slope	0.04		

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
CmC2:				
Cincinnati	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	0.04	Seepage	0.53
Wellston	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Depth to bedrock	0.86	Depth to bedrock	0.61
	Slope	0.04	Seepage	0.53
Cn:				
Condit	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00		
CoB:				
Corwin	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.32
CrA:				
Crosby	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
CsA:				
Canal	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
Ee:				
Eel	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53
EkA:				
Eldean	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.72		

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
EkB:				
Eldean--------------	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.72	Slope	0.32
EnC2:				
Eldean--------------	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.72	Slope	1.00
	Slope	0.04		
Eu:				
Euclid--------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Flooding	0.40
	Flooding	0.40		
FbA:				
Fitchville----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
FhA:				
Fox-----------------	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46		
FhB:				
Fox-----------------	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46	Slope	0.32
FhC2:				
Fox-----------------	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46	Slope	1.00
	Slope	0.04		
FhD2:				
Fox-----------------	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
	Slope	1.00	Seepage	1.00
	Restricted permeability	0.46		

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
FmA:				
Fox	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46		
FmB:				
Fox	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.32
	Restricted permeability	0.46		
GaB:				
Gallman	Not limited		Very limited	
			Seepage	1.00
			Slope	0.32
GcD:				
Germano	Very limited		Very limited	
	Restricted permeability	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Seepage	1.00
			Depth to hard bedrock	1.00
GcE:				
Germano	Very limited		Very limited	
	Restricted permeability	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Seepage	1.00
			Depth to hard bedrock	0.61
GdF:				
Germano	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slope	1.00		
	Restricted permeability	0.72	Depth to soft bedrock	1.00
			Slope	1.00
			Seepage	1.00
Rock outcrop	Not rated		Not rated	
Gf:				
Gessie	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53
Gg:				
Gessie	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
GkC:				
Gilpin	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Restricted permeability	0.72	Slope	1.00
	Slope	0.37	Seepage	0.53
GkD:				
Gilpin	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00
	Restricted permeability	0.72	Seepage	0.53
GnB:				
Glenford	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.32
			Seepage	0.28
GnC2:				
Glenford	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	0.37	Seepage	0.28
HhC2:				
Hickory	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
	Slope	0.04	Seepage	0.53
HkE:				
Hickory	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Germano	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Seepage	1.00
	Restricted permeability	0.72	Depth to soft bedrock	1.00
			Depth to hard bedrock	0.93
HmD2:				
Hickory	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Gilpin	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00
	Restricted permeability	0.72	Seepage	0.53

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
HnC2:				
Homewood	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Seepage	0.53
HoD2:				
Homewood	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
Gilpin	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00
	Restricted permeability	0.72	Seepage	0.53
HoE2:				
Homewood	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
Gilpin	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00
	Restricted permeability	0.72	Seepage	0.53
JeB:				
Jeneva	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.32
Km:				
Kokomo	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Ponding	1.00
	Ponding	1.00		
Ko:				
Kokomo	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00		

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Lk:				
Lindside------------	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Restricted permeability	0.72	Seepage	1.00
LtC2:				
Loudonville---------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	0.04	Seepage	1.00
Steinsburg----------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.04	Seepage	1.00
			Slope	1.00
LtD2:				
Loudonville---------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Seepage	1.00
Steinsburg----------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Seepage	1.00
			Depth to bedrock	1.00
LtE:				
Loudonville---------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Seepage	1.00
Steinsburg----------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00
			Seepage	1.00
			Content of large stones	0.05
LtF:				
Loudonville---------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
Steinsburg----------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00
			Seepage	1.00

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
Ma:				
Marengo	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.72	Seepage	0.28
Mb:				
Marengo	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.72	Seepage	0.28
McB:				
McGary	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.32
Me:				
Medway	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	1.00
MkB2:				
Miamian	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.32
MkC2:				
Miamian	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	0.04		
MmC3:				
Miamian	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	0.04		
Thrifton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	0.04		

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
MmD3:				
Miamian-------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00		
Thrifton------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00		
Mo:				
Montgomery----------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00		
Mr:				
Muskego-------------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	1.00
			Ponding	1.00
	Subsidence	1.00	Content of organic matter	1.00
	Ponding	1.00		
NaD2:				
Negley--------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
			Seepage	1.00
NaE:				
Negley--------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
			Seepage	1.00
Ne:				
Newark--------------	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53
OcA:				
Ockley--------------	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
OcB:				
Ockley--------------	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.32
	Restricted permeability	0.46		

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Pa:				
Patton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Ponding	1.00
	Ponding	1.00	Seepage	0.53
Pb:				
Patton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Ponding	1.00
	Ponding	1.00	Seepage	0.53
	Flooding	0.40	Flooding	0.40
Pe:				
Pewamo	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Ponding	1.00
	Ponding	1.00		
Ph:				
Pits	Not rated		Not rated	
PkB:				
Pike	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.32
PkC2:				
Pike	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
	Slope	0.04	Seepage	0.53
Ro:				
Rockmill	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Filtering capacity	1.00	Seepage	1.00
	Ponding	1.00	Ponding	1.00
			Content of organic matter	1.00
Rp:				
Rockmill	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Filtering capacity	1.00	Seepage	1.00
	Ponding	1.00	Ponding	1.00
			Content of organic matter	1.00

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
Rt:				
Rossburg------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46		
Sc:				
Sebring-------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Ponding	1.00
			Flooding	0.40
	Ponding	1.00	Seepage	0.28
	Flooding	0.40		
SdD:				
Shelocta------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
	Depth to bedrock	0.01		
SeE:				
Shelocta------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	1.00
Berks---------------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slope	1.00		
			Slope	1.00
			Seepage	1.00
SfD:				
Shelocta------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
Cruze---------------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
			Depth to soft bedrock	0.18
	Slippage	1.00		
	Slope	1.00		
	Depth to bedrock	0.63		
SfE:				
Shelocta------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
SfE:				
Cruze	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Depth to soft bedrock	0.18
	Slippage	1.00		
	Depth to bedrock	0.63		
Sh:				
Shoals	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53
SkA:				
Sleeth	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46		
St:				
Stonelick	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
			Seepage	1.00
TaC2:				
Tarlton	Very limited		Very limited	
	Restricted permeability	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	0.37	Slope	1.00
ThA:				
Thackery	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
ThB:				
Thackery	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.32
	Restricted permeability	0.46		
Ud, Uf, Ug:				
Udorthents	Not rated		Not rated	

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Um:				
Urban land----------	Not rated		Not rated	
Aetna---------------	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53
UoC:				
Urban land----------	Not rated		Not rated	
Amanda--------------	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	0.94	Depth to saturated zone	0.39
UrB:				
Urban land----------	Not rated		Not rated	
Bennington----------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.08
UtC:				
Urban land----------	Not rated		Not rated	
Cardington----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
UuB:				
Urban land----------	Not rated		Not rated	
Celina--------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.08
UxB:				
Urban land----------	Not rated		Not rated	
Ockley--------------	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.08
Uy:				
Urban land----------	Not rated		Not rated	
Udorthents----------	Not rated		Not rated	

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
WdA:				
Wea	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46		
WeC:				
Wellston	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Depth to bedrock	0.61
	Depth to bedrock	0.86	Seepage	0.53
	Slope	0.37		
WfC:				
Wellston	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.53
	Slope	0.63	Depth to bedrock	0.08
	Depth to bedrock	0.52		
Cruze	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
			Depth to soft bedrock	0.84
	Depth to bedrock	0.94		
	Slope	0.63		
Wg:				
Westland	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.46	Seepage	0.53
Wk:				
Westland	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.46	Seepage	0.53
ZnB:				
Zanesville	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
			Slope	0.32

Table 19a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
ZnC2:				
Zanesville----------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Depth to bedrock	0.69	Seepage	0.53
	Slope	0.37	Depth to soft bedrock	0.26

Table 19b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AfB:						
Alford--------------	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
AfC2:						
Alford--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.04	Slope	0.04	Slope	0.04
Ag:						
Aetna---------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
Ah:						
Aetna---------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
AmB:						
Amanda--------------	Not limited		Not limited		Somewhat limited	
					Too clayey	0.50
AmB2:						
Amanda--------------	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
AmC2:						
Amanda--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Too clayey	0.50	Slope	0.04	Too clayey	0.50
	Slope	0.04			Slope	0.04
AmD2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
AmE2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
AoC3:						
Amanda--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.04	Slope	0.04	Slope	0.04
AoD3:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
ApB2:						
Amanda--------------	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
ApB2:						
Loudonville---------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50			Too clayey	0.50
ApC2:						
Amanda--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.04	Slope	0.04	Too clayey	0.50
					Slope	0.04
Loudonville---------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50	Slope	0.04	Too clayey	0.50
	Slope	0.04			Slope	0.04
ApD2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Loudonville---------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
ArC2:						
Amanda--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.04	Slope	0.04	Slope	0.04
Ockley--------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Seepage	1.00
	Too clayey	0.50	Slope	0.04	Too clayey	0.50
	Slope	0.04			Gravel content	0.27
					Slope	0.04
ArD2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Too clayey	0.50
Ockley--------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00	Slope	1.00	Slope	1.00
	Slope	1.00			Too sandy	0.50
					Gravel content	0.48
Bb:						
Beaucoup------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Too clayey	0.50
	Too clayey	0.50				
BeA:						
Bennington----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BeB:						
Bennington----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
BkF:						
Berks---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
	Seepage	1.00	Depth to bedrock	1.00	Gravel content	0.95
					Seepage	0.52
CaB:						
Cardington----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
	Too clayey	0.50			Too clayey	0.50
CaB2:						
Cardington----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
CaC2:						
Cardington----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
	Too clayey	0.50	Slope	0.04	Too clayey	0.50
	Slope	0.04			Slope	0.04
CaD2:						
Cardington----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
	Too clayey	0.50			Too clayey	0.50
Cb:						
Carlisle------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Content of organic matter	1.00
	Content of organic matter	1.00	Seepage	1.00	Depth to saturated zone	1.00
	Seepage	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Seepage	0.16
CdF:						
Cedarfalls----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Seepage	1.00	Too sandy	1.00
	Seepage	1.00	Depth to bedrock	0.02	Seepage	1.00
	Too sandy	1.00			Depth to bedrock	0.02
Rock outcrop--------	Not rated		Not rated		Not rated	
CeB:						
Celina--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
					Too clayey	0.50

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CfB:						
Centerburg----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
CfB2:						
Centerburg----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
CfC2:						
Centerburg----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50	Slope	0.04	Too clayey	0.50
	Slope	0.04			Slope	0.04
Cg:						
Chagrin-------------	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
CkC2:						
Cincinnati----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.47
	Too clayey	0.50	Slope	0.04	Slope	0.04
	Slope	0.04				
CmC2:						
Cincinnati----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Too clayey	0.50
	Too clayey	0.50	Slope	0.04	Depth to saturated zone	0.47
	Slope	0.04			Slope	0.04
Wellston------------	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.61	Depth to bedrock	0.61
	Slope	0.04	Slope	0.04	Slope	0.04
Cn:						
Condit--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
CoB:						
Corwin--------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
					Too clayey	0.50
CrA:						
Crosby--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
CsA:						
Canal	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
Ee:						
Eel	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.95
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
EkA:						
Eldean	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
					Carbonate content	1.00
					Gravel content	0.64
EkB:						
Eldean	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
					Too clayey	1.00
					Carbonate content	1.00
					Gravel content	0.60
EnC2:						
Eldean	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00	Slope	0.04	Seepage	1.00
	Slope	0.04			Carbonate content	1.00
					Gravel content	0.77
					Slope	0.04
Eu:						
Euclid	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.96
	Flooding	0.40	Flooding	0.40		
FbA:						
Fitchville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
FhA:						
Fox	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
					Too clayey	0.50
					Gravel content	0.03
FhB:						
Fox	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00			Too sandy	0.50
					Gravel content	0.04

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FhC2:						
Fox-----------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00	Slope	0.04	Seepage	1.00
	Slope	0.04			Gravel content	0.07
					Slope	0.04
FhD2:						
Fox-----------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00	Slope	1.00	Slope	1.00
	Slope	1.00			Too sandy	0.50
					Gravel content	0.05
FmA:						
Fox-----------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
					Gravel content	0.01
FmB:						
Fox-----------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
GaB:						
Gallman-------------	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Seepage	1.00	Seepage	0.52
	Too clayey	0.50			Too clayey	0.50
GcD:						
Germano-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
	Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
GcE:						
Germano-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
	Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
					Gravel content	0.21
GdF:						
Germano-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
	Seepage	1.00	Depth to bedrock	1.00	Gravel content	0.75
					Seepage	0.52
Rock outcrop--------	Not rated		Not rated		Not rated	
Gf:						
Gessie--------------	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
Gg:						
Gessie--------------	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GkC:						
Gilpin	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50	Slope	0.37	Too clayey	0.50
	Slope	0.37			Slope	0.37
					Gravel content	0.07
GkD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
					Gravel content	0.01
GnB:						
Glenford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50				
GnC2:						
Glenford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50	Slope	0.37	Too clayey	0.50
	Slope	0.37			Slope	0.37
HhC2:						
Hickory	Somewhat limited		Somewhat limited		Somewhat limited	
	Too clayey	0.50	Slope	0.04	Too clayey	0.50
	Slope	0.04			Slope	0.04
HkE:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
	Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
					Gravel content	0.07
HmD2:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
Gilpin	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.29
HnC2:						
Homewood	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
	Too clayey	0.50	Slope	0.04	Too clayey	0.50
	Slope	0.04			Slope	0.04

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HoD2:						
Homewood------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
	Too clayey	0.50				
Gilpin--------------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
HoE2:						
Homewood------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
	Too clayey	0.50			Too clayey	0.50
Gilpin--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
					Gravel content	0.01
JeB:						
Jeneva--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.68	Depth to saturated zone	0.24
Km:						
Kokomo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Ponding	1.00	Too clayey	1.00
	Ponding	1.00			Ponding	1.00
Ko:						
Kokomo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
Lk:						
Lindside------------	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.68
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.16
	Seepage	1.00				
LtC2:						
Loudonville---------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Seepage	1.00	Seepage	1.00	Too clayey	0.50
	Too clayey	0.50	Slope	0.04	Seepage	0.22
	Slope	0.04			Slope	0.04
					Gravel content	0.01
Steinsburg----------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
	Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
	Slope	0.04	Slope	0.04	Slope	0.04

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
LtD2:						
Loudonville	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage	1.00	Seepage	1.00	Too clayey	0.50
	Too clayey	0.50			Seepage	0.22
					Gravel content	0.01
Steinsburg	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
	Seepage	1.00	Slope	1.00	Depth to bedrock	1.00
	Slope	1.00	Depth to bedrock	1.00	Seepage	0.52
LtE:						
Loudonville	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Seepage	1.00	Seepage	1.00	Seepage	0.22
					Gravel content	0.01
Steinsburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
	Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
					Gravel content	0.06
LtF:						
Loudonville	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
Steinsburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Seepage	1.00	Seepage	1.00	Seepage	0.52
Ma:						
Marengo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
Mb:						
Marengo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
McB:						
McGary	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
Me:						
Medway	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.68
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.22
	Seepage	1.00				
MkB2:						
Miamian	Somewhat limited		Somewhat limited		Somewhat limited	
	Too clayey	0.50	Depth to saturated zone	0.44	Too clayey	0.50
	Depth to saturated zone	0.44			Depth to saturated zone	0.09
MkC2:						
Miamian	Somewhat limited		Somewhat limited		Very limited	
	Too clayey	0.50	Depth to saturated zone	0.44	Hard to compact	1.00
	Depth to saturated zone	0.44	Slope	0.04	Too clayey	0.50
	Slope	0.04			Depth to saturated zone	0.09
					Slope	0.04
MmC3:						
Miamian	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.09
	Slope	0.04	Slope	0.04	Slope	0.04
Thrifton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.84	Depth to saturated zone	0.84	Depth to saturated zone	0.44
	Slope	0.04	Slope	0.04	Slope	0.04
MmD3:						
Miamian	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50	Depth to saturated zone	0.44	Too clayey	0.50
	Depth to saturated zone	0.44			Depth to saturated zone	0.09
Thrifton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.84	Depth to saturated zone	0.84	Depth to saturated zone	0.44
Mo:						
Montgomery	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Ponding	1.00	Too clayey	1.00
	Ponding	1.00			Hard to compact	1.00
					Ponding	1.00
Mr:						
Muskego	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Content of organic matter	1.00	Seepage	1.00	Carbonate content	1.00
	Ponding	1.00	Ponding	1.00	Hard to compact	1.00
					Ponding	1.00
					Gravel content	0.67

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NaD2:						
Negley--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage	1.00	Seepage	1.00	Seepage	0.22
					Gravel content	0.02
NaE:						
Negley--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage	1.00	Seepage	1.00	Seepage	0.22
					Gravel content	0.02
Ne:						
Newark--------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
OcA:						
Ockley--------------	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Seepage	1.00	Too clayey	0.50
	Too clayey	0.50			Gravel content	0.34
					Seepage	0.22
OcB:						
Ockley--------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Seepage	1.00
					Gravel content	0.03
Pa:						
Patton--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
Pb:						
Patton--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50	Flooding	0.40	Too clayey	0.50
	Flooding	0.40				
Pe:						
Pewamo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Ponding	1.00	Too clayey	1.00
	Ponding	1.00			Hard to compact	1.00
					Ponding	1.00
Ph:						
Pits----------------	Not rated		Not rated		Not rated	
PkB:						
Pike----------------	Not limited		Not limited		Not limited	
PkC2:						
Pike----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.04	Slope	0.04	Slope	0.04

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
Ro:						
Rockmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Content of organic matter	1.00
	Content of organic matter	1.00	Seepage	1.00	Depth to saturated zone	1.00
	Seepage	1.00	Ponding	1.00	Seepage	1.00
	Ponding	1.00			Ponding	1.00
Rp:						
Rockmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Content of organic matter	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Content of organic matter	1.00	Seepage	1.00	Seepage	1.00
	Seepage	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00				
Rt:						
Rossburg	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Seepage	1.00				
Sc:						
Sebring	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50	Flooding	0.40	Too clayey	0.50
	Flooding	0.40				
SdD:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00			Gravel content	0.01
	Seepage	1.00				
SeE:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage	1.00			Gravel content	0.02
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Seepage	1.00	Seepage	1.00	Gravel content	0.54
					Seepage	0.22
SfD:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage	1.00			Too clayey	0.50
	Too clayey	0.50			Gravel content	0.01

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SfD:						
Cruze	Very limited		Very limited		Very limited	
	Slope	1.00	Slippage	1.00	Slope	1.00
	Depth to bedrock	1.00	Slope	1.00	Hard to compact	1.00
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
	Too clayey	0.50	Depth to bedrock	0.18	Too clayey	0.50
					Depth to bedrock	0.18
SfE:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage	1.00			Too clayey	0.50
	Too clayey	0.50			Gravel content	0.01
Cruze	Very limited		Very limited		Very limited	
	Slope	1.00	Slippage	1.00	Slope	1.00
	Depth to bedrock	1.00	Slope	1.00	Hard to compact	1.00
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
	Too clayey	0.50	Depth to bedrock	0.18	Too clayey	0.50
					Depth to bedrock	0.18
Sh:						
Shoals	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
SkA:						
Sleeth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage	1.00			Too clayey	0.50
	Too clayey	0.50			Gravel content	0.07
St:						
Stonelick	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Gravel content	1.00
	Seepage	1.00	Seepage	1.00	Seepage	0.52
	Too sandy	1.00			Too sandy	0.50
TaC2:						
Tarlton	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	1.00	Depth to saturated zone	0.95	Too clayey	1.00
	Depth to saturated zone	0.95	Slope	0.37	Hard to compact	1.00
	Slope	0.37			Depth to saturated zone	0.68
					Slope	0.37
ThA:						
Thackery	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.24
	Seepage	1.00				

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ThB:						
Thackery	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
	Seepage	1.00	Seepage	1.00	Carbonate content	1.00
					Gravel content	0.61
					Depth to saturated zone	0.24
Ud, Uf, Ug:						
Udorthents	Not rated		Not rated		Not rated	
Um:						
Urban land	Not rated		Not rated		Not rated	
Aetna	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
UoC:						
Urban land	Not rated		Not rated		Not rated	
Amanda	Not limited		Not limited		Somewhat limited	
					Too clayey	0.50
UrB:						
Urban land	Not rated		Not rated		Not rated	
Bennington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
UtC:						
Urban land	Not rated		Not rated		Not rated	
Cardington	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
	Too clayey	0.50			Too clayey	0.50
UuB:						
Urban land	Not rated		Not rated		Not rated	
Celina	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.68
UxB:						
Urban land	Not rated		Not rated		Not rated	
Ockley	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
					Gravel content	0.30
Uy:						
Urban land	Not rated		Not rated		Not rated	
Udorthents	Not rated		Not rated		Not rated	

Table 19b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WdA:						
Wea	Very limited		Not limited		Somewhat limited	
	Seepage	1.00			Too clayey	0.50
	Too clayey	0.50				
WeC:						
Wellston	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.61	Depth to bedrock	0.61
	Slope	0.37	Slope	0.37	Slope	0.37
WfC:						
Wellston	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Slope	0.63	Slope	0.63
	Slope	0.63	Depth to bedrock	0.08	Too clayey	0.50
	Too clayey	0.50			Depth to bedrock	0.08
Cruze	Very limited		Somewhat limited		Very limited	
	Depth to bedrock	1.00	Depth to saturated zone	0.95	Too clayey	1.00
	Too clayey	1.00	Depth to bedrock	0.84	Hard to compact	1.00
	Depth to saturated zone	0.95	Slope	0.63	Depth to bedrock	0.84
	Slope	0.63			Depth to saturated zone	0.68
					Slope	0.63
Wg:						
Westland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Too clayey	0.50
	Too clayey	0.50			Gravel content	0.01
Wk:						
Westland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Gravel content	0.02
ZnB:						
Zanesville	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.47
ZnC2:						
Zanesville	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to saturated zone	0.86	Too clayey	0.50
	Depth to saturated zone	0.86	Slope	0.37	Depth to saturated zone	0.47
	Too clayey	0.50	Depth to bedrock	0.26	Slope	0.37
	Slope	0.37			Depth to bedrock	0.26

Table 20.--Agricultural Waste Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. "Not rated" indicates that data are not available or that no rating is applicable. See text for further explanation of ratings in this table)

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AfB:						
Alford	Somewhat limited		Very limited		Very limited	
	Too acid	0.50	Too acid	1.00	Too acid	1.00
					Too steep for surface application	0.08
AfC2:						
Alford	Somewhat limited		Very limited		Very limited	
	Too acid	0.50	Too acid	1.00	Too steep for surface application	1.00
	Slope	0.04	Slope	0.04	Too acid	1.00
					Too steep for sprinkler application	0.22
Ag:						
Aetna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	1.00	Flooding	0.60
Ah:						
Aetna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	1.00	Flooding	0.60
AmB:						
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.41	Restricted permeability	0.31	Restricted permeability	0.31
	Too acid	0.02	Too acid	0.07	Too steep for surface application	0.08
					Too acid	0.07
AmB2:						
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.41	Restricted permeability	0.31	Restricted permeability	0.31
	Too acid	0.02	Too acid	0.07	Too steep for surface application	0.08
					Too acid	0.07

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
AmC2:						
Amanda--------------	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.41	Restricted permeability	0.31	Too steep for surface application	1.00
	Slope	0.04	Too acid	0.07	Restricted permeability	0.31
	Too acid	0.02	Slope	0.04	Too steep for sprinkler application	0.22
					Too acid	0.07
AmD2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Restricted permeability	0.41	Restricted permeability	0.31	Too steep for sprinkler application	1.00
	Too acid	0.02	Too acid	0.07	Restricted permeability	0.31
					Too acid	0.07
AmE2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Restricted permeability	0.41	Restricted permeability	0.31	Too steep for sprinkler application	1.00
	Too acid	0.02	Too acid	0.07	Restricted permeability	0.31
					Too acid	0.07
AoC3:						
Amanda--------------	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.41	Restricted permeability	0.31	Too steep for surface application	1.00
	Slope	0.04	Too acid	0.07	Restricted permeability	0.31
	Too acid	0.02	Slope	0.04	Too steep for sprinkler application	0.22
					Too acid	0.07
AoD3:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Restricted permeability	0.41	Restricted permeability	0.31	Too steep for sprinkler application	1.00
	Too acid	0.02	Too acid	0.07	Restricted permeability	0.31
					Too acid	0.07

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
ApB2:						
Amanda	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.41	Restricted permeability	0.31	Restricted permeability	0.31
	Too acid	0.02	Too acid	0.07	Too steep for surface application	0.08
					Too acid	0.07
Loudonville	Somewhat limited		Somewhat limited		Somewhat limited	
	Too acid	0.32	Too acid	0.91	Too acid	0.91
	Droughty	0.01	Droughty	0.01	Too steep for surface application	0.08
	Depth to bedrock	0.01	Depth to bedrock	0.01	Droughty	0.01
					Depth to bedrock	0.01
ApC2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.41	Restricted permeability	0.31	Too steep for surface application	1.00
	Slope	0.04	Too acid	0.07	Restricted permeability	0.31
	Too acid	0.02	Slope	0.04	Too steep for sprinkler application	0.22
					Too acid	0.07
Loudonville	Somewhat limited		Somewhat limited		Very limited	
	Too acid	0.32	Too acid	0.91	Too steep for surface application	1.00
	Depth to bedrock	0.10	Depth to bedrock	0.10	Too acid	0.91
	Slope	0.04	Slope	0.04	Too steep for sprinkler application	0.22
	Droughty	0.01	Droughty	0.01	Depth to bedrock	0.10
					Droughty	0.01
ApD2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Restricted permeability	0.41	Restricted permeability	0.31	Too steep for sprinkler application	1.00
	Too acid	0.02	Too acid	0.07	Restricted permeability	0.31
					Too acid	0.07

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
ApD2:						
Loudonville	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.32	Too acid	0.91	Too steep for sprinkler application	1.00
	Droughty	0.18	Droughty	0.18	Too acid	0.91
	Depth to bedrock	0.06	Depth to bedrock	0.06	Droughty	0.18
					Depth to bedrock	0.06
ArC2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.41	Restricted permeability	0.31	Too steep for surface application	1.00
	Slope	0.04	Too acid	0.07	Restricted permeability	0.31
	Too acid	0.02	Slope	0.04	Too steep for sprinkler application	0.22
					Too acid	0.07
Ockley	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Slope	0.04	Slope	0.04	Too steep for surface application	1.00
					Too steep for sprinkler application	0.22
ArD2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Restricted permeability	0.41	Restricted permeability	0.31	Too steep for sprinkler application	1.00
	Too acid	0.02	Too acid	0.07	Restricted permeability	0.31
					Too acid	0.07
Ockley	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Depth to discontinuity	0.10	Depth to discontinuity	0.10	Too steep for sprinkler application	1.00

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
Bb:						
Beaucoup	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Flooding	0.60
	Restricted permeability	0.41	Restricted permeability	0.31	Restricted permeability	0.31
BeA:						
Bennington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Too acid	0.08	Too acid	0.31	Too acid	0.31
BeB:						
Bennington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Too acid	0.08	Too acid	0.31	Too acid	0.31
					Too steep for surface application	0.08
BkF:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Droughty	1.00	Droughty	1.00
	Droughty	1.00	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	0.84	Too acid	1.00	Too steep for sprinkler application	1.00
	Too acid	0.50	Depth to bedrock	0.84	Too acid	1.00
	Filtering capacity	0.01	Filtering capacity	0.01	Depth to bedrock	0.84
CaB:						
Cardington	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.95
	Restricted permeability	0.74	Restricted permeability	0.60	Restricted permeability	0.60
	Too acid	0.08	Too acid	0.31	Too acid	0.31
					Too steep for surface application	0.08
CaB2:						
Cardington	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.95
	Restricted permeability	0.74	Restricted permeability	0.60	Restricted permeability	0.60
	Too acid	0.08	Too acid	0.31	Too acid	0.31
					Too steep for surface application	0.08

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CaC2:						
Cardington----------	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Too steep for surface application	1.00
	Restricted permeability	0.74	Restricted permeability	0.60	Depth to saturated zone	0.95
	Too acid	0.08	Too acid	0.31	Restricted permeability	0.60
	Slope	0.04	Slope	0.04	Too acid	0.31
					Too steep for sprinkler application	0.22
CaD2:						
Cardington----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Too steep for sprinkler application	1.00
	Restricted permeability	0.74	Restricted permeability	0.60	Depth to saturated zone	0.95
	Too acid	0.08	Too acid	0.31	Restricted permeability	0.60
					Too acid	0.31
Cb:						
Carlisle------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Leaching	0.45	Too acid	0.31	Too acid	0.31
	Too acid	0.08				
CdF:						
Cedarfalls----------	Very limited		Very limited		Very limited	
	Slope	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Filtering capacity	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.78	Too acid	1.00	Too steep for sprinkler application	1.00
	Droughty	0.62	Droughty	0.62	Too acid	1.00
	Leaching	0.45			Droughty	0.62
Rock outcrop--------	Not rated		Not rated		Not rated	
CeB:						
Celina--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Depth to saturated zone	0.95
	Restricted permeability	0.41	Restricted permeability	0.31	Restricted permeability	0.31
	Depth to dense material	0.06	Depth to dense material	0.06	Too steep for surface application	0.08

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
CfB:						
Centerburg----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.41	Too acid	0.31	Too acid	0.31
	Too acid	0.08	Restricted permeability	0.31	Restricted permeability	0.31
					Too steep for surface application	0.08
CfB2:						
Centerburg----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.41	Too acid	0.31	Too acid	0.31
	Too acid	0.08	Restricted permeability	0.31	Restricted permeability	0.31
					Too steep for surface application	0.08
CfC2:						
Centerburg----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to dense layer	1.00	Too acid	0.31	Too steep for surface application	1.00
	Restricted permeability	0.41	Restricted permeability	0.31	Too acid	0.31
	Too acid	0.08	Slope	0.04	Restricted permeability	0.31
	Slope	0.04			Too steep for sprinkler application	0.22
Cg:						
Chagrin-------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
CkC2:						
Cincinnati----------	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Too steep for surface application	1.00
	Restricted permeability	0.74	Restricted permeability	0.60	Depth to saturated zone	0.86
	Depth to fragipan	0.54	Depth to fragipan	0.54	Restricted permeability	0.60
	Too acid	0.08	Too acid	0.31	Depth to fragipan	0.54
	Slope	0.04	Slope	0.04	Too acid	0.31

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
CmC2:						
Cincinnati----------	Very limited		Somewhat limited		Very limited	
	Depth to dense layer	1.00	Depth to saturated zone	0.86	Too steep for surface application	1.00
	Depth to saturated zone	0.86	Restricted permeability	0.60	Depth to saturated zone	0.86
	Restricted permeability	0.74	Depth to fragipan	0.54	Restricted permeability	0.60
	Too acid	0.08	Too acid	0.31	Depth to fragipan	0.54
			Slope	0.04	Too acid	0.31
Wellston------------	Somewhat limited		Very limited		Very limited	
	Too acid	0.68	Too acid	1.00	Too steep for surface application	1.00
	Slope	0.04	Slope	0.04	Too acid	1.00
					Too steep for sprinkler application	0.22
Cn:						
Condit--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Runoff	0.40	Too acid	0.31	Too acid	0.31
	Too acid	0.08				
CoB:						
Corwin--------------	Very limited		Very limited		Very limited	
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too acid	0.02	Too acid	0.07	Too steep for surface application	0.08
	Depth to dense material	0.01	Depth to dense material	0.01	Too acid	0.07
CrA:						
Crosby--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Too acid	0.02	Too acid	0.07	Too acid	0.07
	Depth to dense material	0.01	Depth to dense material	0.01		
CsA:						
Canal---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Too acid	0.08	Too acid	0.31	Too acid	0.31

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
Ee:						
Eel	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	1.00	Flooding	0.60
EkA:						
Eldean	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to discontinuity	0.15	Depth to discontinuity	0.15	Droughty	0.11
	Droughty	0.11	Droughty	0.11		
EkB:						
Eldean	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Droughty	0.10	Droughty	0.10	Droughty	0.10
	Depth to discontinuity	0.10	Depth to discontinuity	0.10	Too steep for surface application	0.08
EnC2:						
Eldean	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Droughty	0.20	Droughty	0.20	Too steep for surface application	1.00
	Depth to discontinuity	0.15	Depth to discontinuity	0.15	Too steep for sprinkler application	0.22
	Slope	0.04	Slope	0.04	Droughty	0.20
Eu:						
Euclid	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.41	Too acid	0.77	Too acid	0.77
	Flooding	0.40	Flooding	0.40	Restricted permeability	0.31
	Too acid	0.22	Restricted permeability	0.31		
FbA:						
Fitchville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.41	Too acid	0.91	Too acid	0.91
	Too acid	0.32	Restricted permeability	0.31	Restricted permeability	0.31
FhA:						
Fox	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to discontinuity	0.10	Depth to discontinuity	0.10	Too acid	0.07
	Too acid	0.02	Too acid	0.07		

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
FhB:						
Fox	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to discontinuity	0.20	Depth to discontinuity	0.20	Too steep for surface application	0.08
	Too acid	0.02	Too acid	0.07	Too acid	0.07
FhC2:						
Fox	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to discontinuity	0.46	Depth to discontinuity	0.46	Too steep for surface application	1.00
	Slope	0.04	Too acid	0.07	Too steep for sprinkler application	0.22
	Too acid	0.02	Slope	0.04	Too acid	0.07
FhD2:						
Fox	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Depth to discontinuity	0.20	Depth to discontinuity	0.20	Too steep for sprinkler application	1.00
	Too acid	0.02	Too acid	0.07	Too acid	0.07
FmA:						
Fox	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to discontinuity	0.15	Depth to discontinuity	0.15	Too acid	0.07
	Too acid	0.02	Too acid	0.07		
FmB:						
Fox	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to discontinuity	0.03	Too acid	0.07	Too steep for surface application	0.08
	Too acid	0.02	Depth to discontinuity	0.03	Too acid	0.07
GaB:						
Gallman	Somewhat limited		Somewhat limited		Somewhat limited	
	Filtering capacity	0.01	Filtering capacity	0.01	Too steep for surface application	0.08
					Filtering capacity	0.01

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
GcD:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Droughty	0.92	Droughty	0.92	Too steep for sprinkler application	1.00
	Depth to bedrock	0.65	Depth to bedrock	0.65	Droughty	0.92
	Too acid	0.08	Too acid	0.31	Depth to bedrock	0.65
	Filtering capacity	0.01	Filtering capacity	0.01	Too acid	0.31
GcE:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Droughty	0.68	Droughty	0.68	Too steep for sprinkler application	1.00
	Too acid	0.08	Too acid	0.31	Droughty	0.68
	Depth to bedrock	0.01	Depth to bedrock	0.01	Too acid	0.31
	Filtering capacity	0.01	Filtering capacity	0.01	Depth to bedrock	0.01
GdF:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Droughty	0.99	Droughty	0.99	Too steep for sprinkler application	1.00
	Depth to bedrock	0.29	Too acid	0.31	Droughty	0.99
	Too acid	0.08	Depth to bedrock	0.29	Too acid	0.31
	Filtering capacity	0.01	Filtering capacity	0.01	Depth to bedrock	0.29
Rock outcrop	Not rated		Not rated		Not rated	
Gf:						
Gessie	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Flooding	0.60
Gg:						
Gessie	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
GkC:						
Gilpin	Somewhat limited		Very limited		Very limited	
	Too acid	0.78	Too acid	1.00	Too acid	1.00
	Slope	0.37	Slope	0.37	Too steep for surface application	1.00
	Droughty	0.25	Droughty	0.25	Too steep for sprinkler application	0.60
	Depth to bedrock	0.06	Depth to bedrock	0.06	Droughty	0.25
					Depth to bedrock	0.06

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GkD:						
Gilpin-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.73	Too acid	1.00	Too steep for sprinkler application	1.00
	Droughty	0.67	Droughty	0.67	Too acid	1.00
	Depth to bedrock	0.54	Depth to bedrock	0.54	Droughty	0.67
					Depth to bedrock	0.54
GnB:						
Glenford------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.41	Too acid	0.31	Too acid	0.31
	Too acid	0.08	Restricted permeability	0.31	Restricted permeability	0.31
					Too steep for surface application	0.08
GnC2:						
Glenford------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.41	Slope	0.37	Too steep for surface application	1.00
	Slope	0.37	Too acid	0.31	Too steep for sprinkler application	0.60
	Too acid	0.08	Restricted permeability	0.31	Too acid	0.31
					Restricted permeability	0.31
HhC2:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Too acid	0.08	Too acid	0.31	Too steep for surface application	1.00
	Slope	0.04	Slope	0.04	Too acid	0.31
					Too steep for sprinkler application	0.22
HkE:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.08	Too acid	0.31	Too steep for sprinkler application	1.00
					Too acid	0.31

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
HkE:						
Germano-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Droughty	0.64	Droughty	0.64	Too steep for sprinkler application	1.00
	Too acid	0.08	Too acid	0.31	Droughty	0.64
	Filtering capacity	0.01	Filtering capacity	0.01	Too acid	0.31
					Filtering capacity	0.01
HmD2:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.08	Too acid	0.31	Too steep for sprinkler application	1.00
					Too acid	0.31
Gilpin--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Too acid	1.00	Too steep for surface application	1.00
	Droughty	0.87	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.78	Droughty	0.87	Too acid	1.00
	Depth to bedrock	0.54	Depth to bedrock	0.54	Droughty	0.87
					Depth to bedrock	0.54
HnC2:						
Homewood------------	Very limited		Very limited		Very limited	
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Depth to dense layer	1.00	Depth to saturated zone	0.95	Too steep for surface application	1.00
	Depth to saturated zone	0.95	Depth to fragipan	0.86	Depth to saturated zone	0.95
	Slope	0.04	Too acid	0.07	Depth to fragipan	0.86
			Slope	0.04	Too steep for sprinkler application	0.22
HoD2:						
Homewood------------	Very limited		Very limited		Very limited	
	Restricted permeability	1.00	Restricted permeability	1.00	Too steep for surface application	1.00
	Slope	1.00	Slope	1.00	Restricted permeability	1.00
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Too steep for sprinkler application	1.00
	Depth to fragipan	0.86	Depth to fragipan	0.86	Depth to saturated zone	0.95
	Too acid	0.02	Too acid	0.07	Depth to fragipan	0.86

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HoD2:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Too acid	1.00	Too steep for surface application	1.00
	Too acid	0.78	Slope	1.00	Too steep for sprinkler application	1.00
	Droughty	0.67	Droughty	0.67	Too acid	1.00
	Depth to bedrock	0.54	Depth to bedrock	0.54	Droughty	0.67
					Depth to bedrock	0.54
HoE2:						
Homewood	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Restricted permeability	1.00	Restricted permeability	1.00	Too steep for sprinkler application	1.00
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Restricted permeability	1.00
	Depth to fragipan	0.86	Depth to fragipan	0.86	Depth to saturated zone	0.95
	Too acid	0.02	Too acid	0.07	Depth to fragipan	0.86
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.78	Too acid	1.00	Too steep for sprinkler application	1.00
	Droughty	0.67	Droughty	0.67	Too acid	1.00
	Depth to bedrock	0.54	Depth to bedrock	0.54	Droughty	0.67
					Depth to bedrock	0.54
JeB:						
Jeneva	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Too acid	0.77	Too acid	0.77
	Too acid	0.22	Depth to saturated zone	0.68	Depth to saturated zone	0.68
					Too steep for surface application	0.08
Km:						
Kokomo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.41	Too acid	0.31	Too acid	0.31
	Too acid	0.08	Restricted permeability	0.31	Restricted permeability	0.31

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
Ko:						
Kokomo-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too acid	0.02	Too acid	0.07	Too acid	0.07
Lk:						
Lindside-----------	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.95
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Flooding	0.60
LtC2:						
Loudonville---------	Somewhat limited		Somewhat limited		Very limited	
	Too acid	0.32	Too acid	0.91	Too steep for surface application	1.00
	Droughty	0.23	Droughty	0.23	Too acid	0.91
	Depth to bedrock	0.10	Depth to bedrock	0.10	Droughty	0.23
	Slope	0.04	Slope	0.04	Too steep for sprinkler application	0.22
	Filtering capacity	0.01	Filtering capacity	0.01	Depth to bedrock	0.10
Steinsburg----------	Very limited		Very limited		Very limited	
	Droughty	1.00	Droughty	1.00	Droughty	1.00
	Too acid	0.73	Too acid	1.00	Too acid	1.00
	Depth to bedrock	0.46	Depth to bedrock	0.46	Too steep for surface application	1.00
	Slope	0.04	Slope	0.04	Depth to bedrock	0.46
	Filtering capacity	0.01	Filtering capacity	0.01	Too steep for sprinkler application	0.22
LtD2:						
Loudonville---------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Droughty	0.43	Too acid	0.91	Too steep for sprinkler application	1.00
	Too acid	0.32	Droughty	0.43	Too acid	0.91
	Depth to bedrock	0.06	Depth to bedrock	0.06	Droughty	0.43
	Filtering capacity	0.01	Filtering capacity	0.01	Depth to bedrock	0.06
Steinsburg----------	Very limited		Very limited		Very limited	
	Slope	1.00	Too acid	1.00	Too steep for surface application	1.00
	Too acid	0.78	Slope	1.00	Too steep for sprinkler application	1.00
	Droughty	0.45	Droughty	0.45	Too acid	1.00
	Filtering capacity	0.01	Filtering capacity	0.01	Droughty	0.45
					Filtering capacity	0.01

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
LtE:						
Loudonville---------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Droughty	0.42	Too acid	0.91	Too steep for sprinkler application	1.00
	Too acid	0.32	Droughty	0.42	Too acid	0.91
	Depth to bedrock	0.03	Depth to bedrock	0.03	Droughty	0.42
	Filtering capacity	0.01	Filtering capacity	0.01	Depth to bedrock	0.03
Steinsburg----------	Very limited		Very limited		Very limited	
	Slope	1.00	Droughty	1.00	Droughty	1.00
	Droughty	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.78	Too acid	1.00	Too steep for sprinkler application	1.00
	Depth to bedrock	0.46	Depth to bedrock	0.46	Too acid	1.00
	Filtering capacity	0.01	Filtering capacity	0.01	Depth to bedrock	0.46
LtF:						
Loudonville---------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.32	Too acid	0.91	Too steep for sprinkler application	1.00
	Depth to bedrock	0.01	Depth to bedrock	0.01	Too acid	0.91
					Depth to bedrock	0.01
Steinsburg----------	Very limited		Very limited		Very limited	
	Slope	1.00	Droughty	1.00	Droughty	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Droughty	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.78	Too acid	1.00	Too steep for sprinkler application	1.00
	Filtering capacity	0.01	Filtering capacity	0.01	Too acid	1.00
Ma:						
Marengo-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Mb:						
Marengo-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
McB:						
McGary	Very limited		Very limited		Very limited	
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too steep for surface application	0.08
Me:						
Medway	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.95
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Flooding	0.60
MkB2:						
Miamian	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.43	Depth to saturated zone	0.43	Depth to saturated zone	0.43
	Restricted permeability	0.41	Restricted permeability	0.31	Restricted permeability	0.31
	Depth to dense material	0.29	Depth to dense material	0.29	Too steep for surface application	0.08
MkC2:						
Miamian	Somewhat limited		Somewhat limited		Very limited	
	Depth to dense material	0.64	Depth to dense material	0.64	Too steep for surface application	1.00
	Depth to saturated zone	0.43	Depth to saturated zone	0.43	Depth to saturated zone	0.43
	Restricted permeability	0.41	Restricted permeability	0.31	Restricted permeability	0.31
	Slope	0.04	Slope	0.04	Too steep for sprinkler application	0.22
MmC3:						
Miamian	Somewhat limited		Somewhat limited		Very limited	
	Depth to dense material	0.84	Depth to dense material	0.84	Too steep for surface application	1.00
	Depth to saturated zone	0.43	Depth to saturated zone	0.43	Depth to saturated zone	0.43
	Restricted permeability	0.41	Restricted permeability	0.31	Restricted permeability	0.31
	Slope	0.04	Slope	0.04	Too steep for sprinkler application	0.22

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MmC3:						
Thrifton	Very limited		Very limited		Very limited	
	Depth to dense material	1.00	Depth to dense material	1.00	Too steep for surface application	1.00
	Depth to dense layer	1.00	Depth to saturated zone	0.84	Depth to saturated zone	0.84
	Depth to saturated zone	0.84	Restricted permeability	0.31	Restricted permeability	0.31
	Restricted permeability	0.41	Slope	0.04	Too steep for sprinkler application	0.22
	Slope	0.04	Droughty	0.01	Droughty	0.01
MmD3:						
Miamian	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Depth to dense material	0.71	Depth to dense material	0.71	Too steep for sprinkler application	1.00
	Depth to saturated zone	0.43	Depth to saturated zone	0.43	Depth to saturated zone	0.43
	Restricted permeability	0.41	Restricted permeability	0.31	Restricted permeability	0.31
Thrifton	Very limited		Very limited		Very limited	
	Depth to dense material	1.00	Depth to dense material	1.00	Too steep for surface application	1.00
	Slope	1.00	Slope	1.00	Too steep for sprinkler application	1.00
	Depth to dense layer	1.00	Depth to saturated zone	0.84	Depth to saturated zone	0.84
	Depth to saturated zone	0.84	Restricted permeability	0.31	Restricted permeability	0.31
	Restricted permeability	0.41				
Mo:						
Montgomery	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Runoff	0.40				
Mr:						
Muskego	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Leaching	0.45				

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NaD2:						
Negley--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.08	Too acid	0.31	Too steep for sprinkler application	1.00
	Filtering capacity	0.01	Filtering capacity	0.01	Too acid	0.31
					Filtering capacity	0.01
NaE:						
Negley--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.08	Too acid	0.31	Too steep for sprinkler application	1.00
	Filtering capacity	0.01	Filtering capacity	0.01	Too acid	0.31
					Filtering capacity	0.01
Ne:						
Newark--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	1.00	Flooding	0.60
OcA:						
Ockley--------------	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
OcB:						
Ockley--------------	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
					Too steep for surface application	0.08
Pa:						
Patton--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.41	Restricted permeability	0.31	Restricted permeability	0.31
Pb:						
Patton--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.41	Flooding	0.40	Restricted permeability	0.31
	Flooding	0.40	Restricted permeability	0.31		

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
Pe:						
Pewamo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.41	Restricted permeability	0.31	Restricted permeability	0.31
Ph:						
Pits	Not rated		Not rated		Not rated	
PkB:						
Pike	Somewhat limited		Somewhat limited		Somewhat limited	
	Too acid	0.08	Too acid	0.31	Too acid	0.31
					Too steep for surface application	0.08
PkC2:						
Pike	Somewhat limited		Somewhat limited		Very limited	
	Too acid	0.08	Too acid	0.31	Too steep for surface application	1.00
	Slope	0.04	Slope	0.04	Too acid	0.31
					Too steep for sprinkler application	0.22
Ro:						
Rockmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Filtering capacity	0.01	Filtering capacity	0.01	Filtering capacity	0.01
Rp:						
Rockmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Flooding	0.60
	Filtering capacity	0.01	Filtering capacity	0.01	Filtering capacity	0.01
Rt:						
Rossburg	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Flooding	0.60
	Filtering capacity	0.01	Filtering capacity	0.01	Filtering capacity	0.01
Sc:						
Sebring	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.41	Flooding	0.40	Too acid	0.31
	Flooding	0.40	Too acid	0.31	Restricted permeability	0.31
	Too acid	0.08	Restricted permeability	0.31		

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
SdD:						
Shelocta------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.50	Too acid	1.00	Too steep for sprinkler application	1.00
					Too acid	1.00
SeE:						
Shelocta------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.50	Too acid	1.00	Too steep for sprinkler application	1.00
					Too acid	1.00
Berks---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Droughty	1.00	Droughty	1.00
	Droughty	1.00	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	0.90	Too acid	0.99	Too steep for sprinkler application	1.00
	Too acid	0.43	Depth to bedrock	0.90	Too acid	0.99
					Depth to bedrock	0.90
SfD:						
Shelocta------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.50	Too acid	1.00	Too steep for sprinkler application	1.00
					Too acid	1.00
Cruze---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Depth to saturated zone	0.95	Too acid	1.00	Too steep for sprinkler application	1.00
	Restricted permeability	0.74	Depth to saturated zone	0.95	Too acid	1.00
	Too acid	0.62	Restricted permeability	0.60	Depth to saturated zone	0.95
					Restricted permeability	0.60

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
SfE:						
Shelocta------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.50	Too acid	1.00	Too steep for sprinkler application	1.00
					Too acid	1.00
Cruze---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Depth to saturated zone	0.95	Too acid	1.00	Too steep for sprinkler application	1.00
	Restricted permeability	0.74	Depth to saturated zone	0.95	Too acid	1.00
	Too acid	0.62	Restricted permeability	0.60	Depth to saturated zone	0.95
					Restricted permeability	0.60
Sh:						
Shoals--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	1.00	Flooding	0.60
SkA:						
Sleeth--------------	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
St:						
Stonelick-----------	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Flooding	0.60
	Filtering capacity	0.01	Filtering capacity	0.01	Filtering capacity	0.01
TaC2:						
Tarlton-------------	Very limited		Very limited		Very limited	
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Depth to saturated zone	0.95	Depth to saturated zone	0.95	Too steep for surface application	1.00
	Droughty	0.39	Droughty	0.39	Depth to saturated zone	0.95
	Slope	0.37	Slope	0.37	Too steep for sprinkler application	0.60
	Depth to bedrock	0.16	Depth to bedrock	0.16	Droughty	0.39
ThA:						
Thackery------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.68	Depth to saturated zone	0.68

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
ThB:						
Thackery	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	0.68	Depth to saturated zone	0.68
					Too steep for surface application	0.08
Ud, Uf, Ug:						
Udorthents	Not rated		Not rated		Not rated	
Um:						
Urban land	Not rated		Not rated		Not rated	
Aetna	Not rated		Not rated		Not rated	
UoC:						
Urban land	Not rated		Not rated		Not rated	
Amanda	Not rated		Not rated		Not rated	
UrB:						
Urban land	Not rated		Not rated		Not rated	
Bennington	Not rated		Not rated		Not rated	
UtC:						
Urban land	Not rated		Not rated		Not rated	
Cardington	Not rated		Not rated		Not rated	
UuB:						
Urban land	Not rated		Not rated		Not rated	
Celina	Not rated		Not rated		Not rated	
UxB:						
Urban land	Not rated		Not rated		Not rated	
Ockley	Not rated		Not rated		Not rated	
Uy:						
Urban land	Not rated		Not rated		Not rated	
Udorthents	Not rated		Not rated		Not rated	
WdA:						
Wea	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
WeC:						
Wellston	Somewhat limited		Very limited		Very limited	
	Too acid	0.73	Too acid	1.00	Too steep for surface application	1.00
	Slope	0.37	Slope	0.37	Too acid	1.00
					Too steep for sprinkler application	0.60
WfC:						
Wellston	Somewhat limited		Very limited		Very limited	
	Too acid	0.73	Too acid	1.00	Too steep for surface application	1.00
	Slope	0.63	Slope	0.63	Too acid	1.00
					Too steep for sprinkler application	0.78
Cruze	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.95	Too acid	1.00	Too steep for surface application	1.00
	Restricted permeability	0.74	Depth to saturated zone	0.95	Too acid	1.00
	Slope	0.63	Slope	0.63	Depth to saturated zone	0.95
	Too acid	0.62	Restricted permeability	0.60	Too steep for sprinkler application	0.78
					Restricted permeability	0.60
Wg:						
Westland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Wk:						
Westland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
ZnB:						
Zanesville	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Too acid	0.91	Too acid	0.91
	Restricted permeability	0.74	Depth to saturated zone	0.86	Depth to saturated zone	0.86
	Too acid	0.32	Restricted permeability	0.60	Restricted permeability	0.60
	Depth to fragipan	0.26	Depth to fragipan	0.26	Depth to fragipan	0.26
					Too steep for surface application	0.08

Table 20.--Agricultural Waste Management--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ZnC2:						
Zanesville----------	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.86	Too acid	0.91	Too steep for surface application	1.00
	Restricted permeability	0.74	Depth to saturated zone	0.86	Too acid	0.91
	Slope	0.37	Restricted permeability	0.60	Depth to saturated zone	0.86
	Too acid	0.32	Slope	0.37	Too steep for sprinkler application	0.60
	Depth to fragipan	0.26	Depth to fragipan	0.26	Restricted permeability	0.60

Table 21a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AfB:						
Alford	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
AfC2:						
Alford	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
Ag:						
Aetna	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.50	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.50		
Ah:						
Aetna	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.50	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.50		
AmB:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
AmB2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
AmC2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
AmD2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
	Slope	0.04				
AmE2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
	Slope	0.41				
AoC3:						
Amanda	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Piping	1.00	Depth to water	1.00
AoD3:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
	Slope	0.04				
ApB2:						
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
ApB2:						
Loudonville---------	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.52	Thin layer	0.70	Depth to water	1.00
	Seepage	0.50	Piping	0.50		
ApC2:						
Amanda--------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
Loudonville---------	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.69	Piping	0.50	Depth to water	1.00
	Seepage	0.50				
ApD2:						
Amanda--------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
	Slope	0.04				
Loudonville---------	Somewhat limited		Very limited		Very limited	
	Depth to bedrock	0.66	Piping	1.00	Depth to water	1.00
	Seepage	0.50	Thin layer	0.67		
	Slope	0.04				
ArC2:						
Amanda--------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
Ockley--------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
ArD2:						
Amanda--------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
	Slope	0.04				
Ockley--------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
	Slope	0.04	Piping	1.00		
Bb:						
Beaucoup------------	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.50		
BeA:						
Bennington----------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		
BeB:						
Bennington----------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
BkF:						
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
	Slope	1.00	Piping	1.00		
	Depth to bedrock	0.91	Thin layer	0.70		
CaB:						
Cardington	Not limited		Somewhat limited		Very limited	
			Depth to saturated zone	0.95	Depth to water	1.00
			Piping	0.50		
CaB2:						
Cardington	Not limited		Somewhat limited		Very limited	
			Depth to saturated zone	0.95	Depth to water	1.00
			Piping	0.50		
CaC2:						
Cardington	Not limited		Somewhat limited		Very limited	
			Depth to saturated zone	0.95	Depth to water	1.00
			Piping	0.50		
CaD2:						
Cardington	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Depth to saturated zone	0.95	Depth to water	1.00
			Piping	0.50		
Cb:						
Carlisle	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Content of organic matter	1.00		
CdF:						
Cedarfalls	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
	Slope	1.00	Piping	1.00		
	Depth to bedrock	0.01				
Rock outcrop	Not rated		Not rated		Not rated	
CeB:						
Celina	Not limited		Somewhat limited		Very limited	
			Depth to saturated zone	0.95	Depth to water	1.00
			Piping	0.50		
CfB:						
Centerburg	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CfB2:						
Centerburg----------	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		
CfC2:						
Centerburg----------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		
Cg:						
Chagrin-------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Seepage	1.00	Depth to water	1.00
			Piping	1.00		
CkC2:						
Cincinnati----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.86	Depth to water	1.00
			Piping	0.50		
CmC2:						
Cincinnati----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.86	Depth to water	1.00
			Piping	0.50		
Wellston------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
	Depth to bedrock	0.16				
Cn:						
Condit--------------	Not limited		Very limited		Very limited	
			Ponding	1.00	Depth to water	1.00
			Depth to saturated zone	1.00		
			Piping	0.50		
CoB:						
Corwin--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.50	Piping	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
					Depth to water	0.01
CrA:						
Crosby--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.50	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.50		
CsA:						
Canal---------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to compact	1.00		

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ee:						
Eel	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.50	Depth to saturated zone	1.00	Slow refill	0.28
			Piping	0.50	Cutbanks cave	0.10
EkA:						
Eldean	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
			Piping	1.00		
EkB:						
Eldean	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
			Piping	1.00		
EnC2:						
Eldean	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
			Piping	1.00		
Eu:						
Euclid	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Slow refill	0.96
			Piping	0.50	Cutbanks cave	0.10
FbA:						
Fitchville	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Depth to saturated zone	1.00	Slow refill	0.28
			Piping	0.50	Cutbanks cave	0.10
FhA:						
Fox	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
FhB:						
Fox	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
FhC2:						
Fox	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
FhD2:						
Fox	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
	Slope	0.04				
FmA:						
Fox	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
FmB:						
Fox	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GaB:						
Gallman-------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
GcD:						
Germano-------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
	Depth to bedrock	0.46	Thin layer	0.47		
	Slope	0.12				
GcE:						
Germano-------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
	Slope	0.64	Piping	1.00		
	Depth to bedrock	0.16	Thin layer	0.47		
GdF:						
Germano-------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
	Slope	1.00	Piping	1.00		
	Depth to bedrock	0.66	Thin layer	0.13		
Rock outcrop--------	Not rated		Not rated		Not rated	
Gf:						
Gessie--------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Piping	1.00	Depth to water	1.00
Gg:						
Gessie--------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
GkC:						
Gilpin--------------	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.66	Piping	0.50	Depth to water	1.00
	Seepage	0.50	Thin layer	0.30		
	Slope	0.01				
GkD:						
Gilpin--------------	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.88	Piping	0.50	Depth to water	1.00
	Seepage	0.50	Thin layer	0.37		
	Slope	0.12				
GnB:						
Glenford------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Depth to saturated zone	1.00	Slow refill	0.46
					Cutbanks cave	0.10
			Piping	0.50		
GnC2:						
Glenford------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Depth to saturated zone	1.00	Slow refill	0.46
	Slope	0.01			Cutbanks cave	0.10
			Piping	0.50		
HhC2:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HkE:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
	Slope	0.41				
Germano	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
	Slope	0.41	Thin layer	0.47		
	Depth to bedrock	0.33				
HmD2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
	Slope	0.04				
Gilpin	Somewhat limited		Very limited		Very limited	
	Depth to bedrock	0.88	Thin layer	1.00	Depth to water	1.00
	Seepage	0.50	Piping	1.00		
	Slope	0.04				
HnC2:						
Homewood	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.95	Depth to water	1.00
			Piping	0.50		
HoD2:						
Homewood	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.95	Depth to water	1.00
	Slope	0.04				
			Piping	0.50		
Gilpin	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.88	Piping	0.50	Depth to water	1.00
	Seepage	0.50	Thin layer	0.37		
	Slope	0.04				
HoE2:						
Homewood	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.95	Depth to water	1.00
	Slope	0.41				
			Piping	0.50		
Gilpin	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.88	Piping	0.50	Depth to water	1.00
	Seepage	0.50	Thin layer	0.37		
	Slope	0.41				
JeB:						
Jeneva	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.68	Depth to water	1.00
			Piping	0.50		
Km:						
Kokomo	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.50		

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
Ko:						
Kokomo	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.50		
Lk:						
Lindside	Very limited		Somewhat limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	0.95	Cutbanks cave	0.10
					Depth to water	0.02
			Piping	0.50		
LtC2:						
Loudonville	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
	Depth to bedrock	0.69	Thin layer	0.30		
Steinsburg	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.83	Depth to water	1.00
	Depth to bedrock	0.86				
LtD2:						
Loudonville	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
	Depth to bedrock	0.66	Thin layer	0.80		
	Slope	0.04				
Steinsburg	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
	Depth to bedrock	0.46	Thin layer	0.30		
	Slope	0.04				
LtE:						
Loudonville	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Depth to bedrock	0.61	Thin layer	0.40		
	Slope	0.41				
Steinsburg	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.30	Depth to water	1.00
	Depth to bedrock	0.86				
	Slope	0.41				
LtF:						
Loudonville	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.50	Depth to water	1.00
	Depth to bedrock	0.56	Thin layer	0.13		
	Seepage	0.50				
Steinsburg	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
	Slope	1.00	Piping	1.00		
	Seepage	1.00				
Ma:						
Marengo	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.50		

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
Mb:						
Marengo-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.50		
McB:						
McGary--------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		
Me:						
Medway--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Depth to saturated zone	0.95	Cutbanks cave	1.00
					Depth to water	0.02
			Piping	0.50		
MkB2:						
Miamian-------------	Not limited		Somewhat limited		Very limited	
			Piping	0.50	Depth to water	1.00
			Depth to saturated zone	0.43		
MkC2:						
Miamian-------------	Not limited		Very limited		Very limited	
			Hard to compact	1.00	Depth to water	1.00
			Depth to saturated zone	0.43		
MmC3:						
Miamian-------------	Not limited		Somewhat limited		Very limited	
			Piping	0.50	Depth to water	1.00
			Depth to saturated zone	0.43		
Thrifton------------	Not limited		Somewhat limited		Very limited	
			Depth to saturated zone	0.84	Depth to water	1.00
			Piping	0.50		
MmD3:						
Miamian-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Piping	0.50	Depth to water	1.00
			Depth to saturated zone	0.43		
Thrifton------------	Somewhat limited		Very limited		Very limited	
	Slope	0.04	Piping	1.00	Depth to water	1.00
			Depth to saturated zone	0.84		
Mo:						
Montgomery----------	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to compact	1.00		

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
Mr:						
Muskego-------------	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Content of organic matter	1.00		
NaD2:						
Negley--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Slope	0.04				
NaE:						
Negley--------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
	Slope	0.41				
Ne:						
Newark--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.50	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.50		
OcA:						
Ockley--------------	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
OcB:						
Ockley--------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
Pa:						
Patton--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.50	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.50		
Pb:						
Patton--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.50	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.50		
Pe:						
Pewamo--------------	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to compact	1.00		
Ph:						
Pits----------------	Not rated		Not rated		Not rated	
PkB:						
Pike----------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
PkC2:						
Pike	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
Ro:						
Rockmill	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Content of organic matter	1.00		
Rp:						
Rockmill	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Content of organic matter	1.00		
Rt:						
Rossburg	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
Sc:						
Sebring	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.50		
SdD:						
Shelocta	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Slope	0.12				
SeE:						
Shelocta	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Slope	0.41				
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
	Depth to bedrock	0.93	Thin layer	0.80		
	Slope	0.64				
SfD:						
Shelocta	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Slope	0.12				
Cruze	Very limited		Very limited		Very limited	
	Slippage	1.00	Hard to compact	1.00	Depth to water	1.00
	Slope	0.12	Depth to saturated zone	0.95		
	Depth to bedrock	0.01				
SfE:						
Shelocta	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Slope	0.64				

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
SfE:						
Cruze	Very limited		Very limited		Very limited	
	Slippage	1.00	Hard to compact	1.00	Depth to water	1.00
	Slope	0.64	Depth to saturated zone	0.95		
	Depth to bedrock	0.01				
Sh:						
Shoals	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Depth to saturated zone	1.00	Cutbanks cave	1.00
					Slow refill	0.28
			Piping	0.50		
SkA:						
Sleeth	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	1.00		
St:						
Stonelick	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
			Piping	1.00		
TaC2:						
Tarlton	Somewhat limited		Very limited		Very limited	
	Depth to bedrock	0.52	Hard to compact	1.00	Depth to water	1.00
	Slope	0.01	Depth to saturated zone	0.95		
			Thin layer	0.90		
ThA:						
Thackery	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Depth to saturated zone	0.68	Cutbanks cave	1.00
					Depth to water	0.14
			Piping	0.50		
ThB:						
Thackery	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Cutbanks cave	1.00
			Piping	1.00	Depth to water	0.14
			Depth to saturated zone	0.68		
Ud, Uf, Ug:						
Udorthents	Not rated		Not rated		Not rated	
Um:						
Urban land	Not rated		Not rated		Not rated	
Aetna	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.50	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.50		
UoC:						
Urban land	Not rated		Not rated		Not rated	
Amanda	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UrB:						
Urban land	Not rated		Not rated		Not rated	
Bennington	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		
UtC:						
Urban land	Not rated		Not rated		Not rated	
Cardington	Not limited		Somewhat limited		Very limited	
			Depth to saturated zone	0.95	Depth to water	1.00
			Piping	0.50		
UuB:						
Urban land	Not rated		Not rated		Not rated	
Celina	Not limited		Somewhat limited		Very limited	
			Depth to saturated zone	0.95	Depth to water	1.00
			Piping	0.50		
UxB:						
Urban land	Not rated		Not rated		Not rated	
Ockley	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
Uy:						
Urban land	Not rated		Not rated		Not rated	
Udorthents	Not rated		Not rated		Not rated	
WdA:						
Wea	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
WeC:						
Wellston	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
	Depth to bedrock	0.16				
	Slope	0.01				
WfC:						
Wellston	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
	Depth to bedrock	0.02				
	Slope	0.01				
Cruze	Somewhat limited		Very limited		Very limited	
	Slope	0.01	Hard to compact	1.00	Depth to water	1.00
	Depth to bedrock	0.01	Depth to saturated zone	0.95		
			Thin layer	0.13		

Table 21a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Wg:						
Westland------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Piping	1.00		
Wk:						
Westland------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Piping	1.00		
ZnB:						
Zanesville----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.86	Depth to water	1.00
			Piping	0.50		
ZnC2:						
Zanesville----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.86	Depth to water	1.00
	Slope	0.01				
	Depth to bedrock	0.01	Piping	0.50		

Table 21b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
AfB:						
Alford	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
					Slope	0.04
AfC2:						
Alford	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Slope	1.00	Slope	0.96
Ag:						
Aetna	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
Ah:						
Aetna	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
AmB:						
Amanda	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
					Slope	0.04
AmB2:						
Amanda	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
					Slope	0.04
AmC2:						
Amanda	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	0.96
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
AmD2:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmE2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
AoC3:						
Amanda--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	0.96
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
AoD3:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
ApB2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
					Slope	0.04
Loudonville---------	Very limited		Very limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	0.04
	Content of large stones	0.01	Content of large stones	0.01	Depth to bedrock	0.01
ApC2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	0.96
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
Loudonville---------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	0.96
	Slope	1.00	Slope	1.00	Depth to bedrock	0.02
ApD2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
Loudonville---------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.02
	Content of large stones	0.06	Content of large stones	0.06		

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
ArC2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	0.96
Ockley--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
	Slope	1.00	Slope	1.00		
ArD2:						
Amanda--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
Ockley--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Cutbanks cave	1.00
			Too sandy	1.00		
Bb:						
Beaucoup------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.22	Ponding	1.00	Frost action	1.00
			Restricted permeability	0.22	Flooding	0.50
					Restricted permeability	0.22
BeA:						
Bennington----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.40
	Restricted permeability	0.40	Restricted permeability	0.40		
BeB:						
Bennington----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Restricted permeability	0.91	Slope	0.04
BkF:						
Berks---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Content of large stones	0.49
	Droughty	1.00	Content of large stones	1.00	Depth to bedrock	0.26
	Content of large stones	1.00	Depth to soft bedrock	0.84		
	Depth to soft bedrock	0.84				

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CaB:						
Cardington----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Restricted permeability	0.40
	Restricted permeability	0.40	Restricted permeability	0.40	Slope	0.04
CaB2:						
Cardington----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Restricted permeability	0.40
	Restricted permeability	0.40	Restricted permeability	0.40	Slope	0.04
CaC2:						
Cardington----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Slope	1.00	Slope	0.96
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Restricted permeability	0.40
	Restricted permeability	0.40	Restricted permeability	0.40		
CaD2:						
Cardington----------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Restricted permeability	0.40
	Restricted permeability	0.40	Restricted permeability	0.40		
Cb:						
Carlisle------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
			Ponding	1.00	Frost action	1.00
					Subsidence	1.00
CdF:						
Cedarfalls----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Droughty	1.00	Too sandy	1.00	Cutbanks cave	1.00
	Content of large stones	0.45	Content of large stones	0.45	Content of large stones	0.49
	Depth to bedrock	0.02	Depth to bedrock	0.02		
Rock outcrop--------	Not rated		Not rated		Not rated	
CeB:						
Celina--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22	Slope	0.04

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
CfB:						
Centerburg----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22	Slope	0.04
CfB2:						
Centerburg----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22	Slope	0.04
CfC2:						
Centerburg----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Depth to saturated zone	1.00	Slope	0.96
	Depth to saturated zone	1.00	Slope	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
Cg:						
Chagrin-------------	Not limited		Not limited		Very limited	
					Flooding	1.00
					Depth to saturated zone	1.00
CkC2:						
Cincinnati----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Rooting depth	1.00	Slope	0.96
	Slope	1.00	Slope	1.00	Restricted permeability	0.40
	Depth to saturated zone	0.47	Depth to saturated zone	1.00		
	Restricted permeability	0.40	Restricted permeability	0.40		
CmC2:						
Cincinnati----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Rooting depth	1.00	Slope	0.96
	Slope	1.00	Slope	1.00	Restricted permeability	0.40
	Depth to saturated zone	0.47	Depth to saturated zone	1.00		
	Restricted permeability	0.40	Restricted permeability	0.40		
Wellston------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Slope	1.00	Slope	0.96
	Depth to bedrock	0.61	Depth to bedrock	0.61		

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
Cn:						
Condit	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.94	Ponding	1.00	Restricted permeability	0.94
			Restricted permeability	0.94		
CoB:						
Corwin	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Depth to saturated zone	1.00	Slope	0.04
	Depth to saturated zone	0.86	Restricted permeability	0.91		
CrA:						
Crosby	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Restricted permeability	0.91		
CsA:						
Canal	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
Ee:						
Eel	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.95	Depth to saturated zone	1.00	Flooding	1.00
EkA:						
Eldean	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Cutbanks cave	1.00
			Too sandy	1.00		
EkB:						
Eldean	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
			Too sandy	1.00		
EnC2:						
Eldean	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Cutbanks cave	1.00
	Slope	1.00	Too sandy	1.00	Slope	0.96
			Slope	1.00		

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
Eu:						
Euclid--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.96	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
FbA:						
Fitchville----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
FhA:						
Fox-----------------	Very limited		Very limited		Not limited	
	Water erosion	1.00	Water erosion	1.00		
			Too sandy	1.00		
FhB:						
Fox-----------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Cutbanks cave	1.00
			Too sandy	1.00	Slope	0.04
FhC2:						
Fox-----------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Cutbanks cave	1.00
	Slope	1.00	Too sandy	1.00	Slope	0.96
			Slope	1.00		
FhD2:						
Fox-----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Cutbanks cave	1.00
			Too sandy	1.00		
FmA:						
Fox-----------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Cutbanks cave	1.00
			Too sandy	1.00		
FmB:						
Fox-----------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Cutbanks cave	1.00
			Too sandy	1.00	Slope	0.04
GaB:						
Gallman-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.04

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GcD:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Droughty	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.17
	Depth to hard bedrock	1.00	Depth to soft bedrock	0.64		
	Depth to soft bedrock	0.64	Content of large stones	0.30		
	Content of large stones	0.30				
GcE:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.92	Content of large stones	0.92	Content of large stones	0.18
	Depth to hard bedrock	0.61	Depth to hard bedrock	0.61	Depth to bedrock	0.01
	Depth to soft bedrock	0.01	Depth to soft bedrock	0.01		
GdF:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Content of large stones	0.18
	Droughty	1.00	Content of large stones	1.00	Depth to bedrock	0.07
	Content of large stones	1.00	Depth to soft bedrock	0.29		
	Depth to soft bedrock	0.29				
Rock outcrop	Not rated		Not rated		Not rated	
Gf:						
Gessie	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Flooding	1.00
Gg:						
Gessie	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Flooding	1.00
GkC:						
Gilpin	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	0.02
	Content of large stones	0.90	Content of large stones	0.90		
GkD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.14
	Content of large stones	0.82	Content of large stones	0.82		
GnB:						
Glenford	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.04

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
GnC2:						
Glenford------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
HhC2:						
Hickory-------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
	Slope	1.00	Slope	1.00		
HkE:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00		
Germano-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	0.93	Depth to bedrock	0.93		
	Content of large stones	0.77	Content of large stones	0.77		
HmD2:						
Hickory-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00		
Gilpin--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Content of large stones	0.18
	Droughty	1.00	Content of large stones	0.90	Depth to bedrock	0.14
	Content of large stones	0.90				
HnC2:						
Homewood------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
	Rooting depth	1.00	Rooting depth	1.00	Restricted permeability	0.91
	Slope	1.00	Slope	1.00		
	Restricted permeability	0.91	Depth to saturated zone	1.00		
	Depth to saturated zone	0.68	Restricted permeability	0.91		
HoD2:						
Homewood------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Restricted permeability	0.91
	Rooting depth	1.00	Rooting depth	1.00		
	Restricted permeability	0.91	Depth to saturated zone	1.00		
	Depth to saturated zone	0.68	Restricted permeability	0.91		

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HoD2:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.14
	Content of large stones	0.78	Content of large stones	0.78		
HoE2:						
Homewood	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Restricted permeability	0.91
	Rooting depth	1.00	Rooting depth	1.00		
	Restricted permeability	0.91	Depth to saturated zone	1.00		
	Depth to saturated zone	0.68	Restricted permeability	0.91		
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.14
	Content of large stones	0.82	Content of large stones	0.82		
JeB:						
Jeneva	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Slope	0.04
Km:						
Kokomo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Frost action	1.00
	Restricted permeability	0.22	Ponding	1.00	Restricted permeability	0.22
			Restricted permeability	0.22		
Ko:						
Kokomo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Frost action	1.00
	Restricted permeability	0.22	Ponding	1.00	Restricted permeability	0.22
			Restricted permeability	0.22		
Lk:						
Lindside	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Flooding	0.50
LtC2:						
Loudonville	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	0.96
	Slope	1.00	Slope	1.00	Depth to bedrock	0.02

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
LtC2:						
Steinsburg----------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Content of large stones	1.00
	Droughty	1.00	Slope	1.00	Slope	0.96
	Slope	1.00	Content of large stones	0.96	Depth to bedrock	0.12
	Content of large stones	0.96				
LtD2:						
Loudonville---------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.02
Steinsburg----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00		
	Content of large stones	0.39	Content of large stones	0.39		
LtE:						
Loudonville---------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.01
Steinsburg----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Content of large stones	1.00
	Droughty	1.00	Content of large stones	1.00	Depth to bedrock	0.12
	Content of large stones	1.00				
LtF:						
Loudonville---------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.01
Steinsburg----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	0.63
	Droughty	1.00				
Ma:						
Marengo-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
			Ponding	1.00	Frost action	1.00
Mb:						
Marengo-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
			Ponding	1.00	Frost action	1.00
McB:						
McGary--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.99
	Restricted permeability	0.99	Restricted permeability	0.99	Slope	0.04

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
Me:						
Medway	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Frost action	1.00
					Flooding	1.00
MkB2:						
Miamian	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
	Depth to saturated zone	0.09			Slope	0.04
MkC2:						
Miamian	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	0.96
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
	Depth to saturated zone	0.09				
MmC3:						
Miamian	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	0.96
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
	Depth to saturated zone	0.09				
Thrifton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	0.96
	Depth to saturated zone	0.44	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
MmD3:						
Miamian	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
	Depth to saturated zone	0.09				
Thrifton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.44	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
Mo:						
Montgomery----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.40	Ponding	1.00	Restricted permeability	0.40
			Restricted permeability	0.40		
Mr:						
Muskego-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.91	Ponding	1.00	Frost action	1.00
			Restricted permeability	0.91	Subsidence	1.00
					Restricted permeability	0.91
NaD2:						
Negley--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
NaE:						
Negley--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Ne:						
Newark--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	0.50
OcA:						
Ockley--------------	Very limited		Very limited		Not limited	
	Water erosion	1.00	Water erosion	1.00		
OcB:						
Ockley--------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
Pa:						
Patton--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
			Ponding	1.00		
Pb:						
Patton--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
			Ponding	1.00		
Pe:						
Pewamo--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.22	Ponding	1.00	Frost action	1.00
			Restricted permeability	0.22	Restricted permeability	0.22

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ph:						
Pits	Not rated		Not rated		Not rated	
PkB:						
Pike	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
					Slope	0.04
PkC2:						
Pike	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Slope	1.00	Slope	0.96
Ro:						
Rockmill	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
			Ponding	1.00		
Rp:						
Rockmill	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
					Flooding	1.00
			Ponding	1.00		
Rt:						
Rossburg	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Flooding	1.00
Sc:						
Sebring	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
					Restricted permeability	0.22
	Restricted permeability	0.22	Ponding	1.00		
			Restricted permeability	0.22		
SdD:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.14	Content of large stones	0.14		
SeE:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.08	Content of large stones	0.08		
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.30
	Droughty	1.00	Content of large stones	0.98		
	Content of large stones	0.98	Depth to soft bedrock	0.90		
	Depth to soft bedrock	0.90				

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SfD:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.10	Content of large stones	0.10		
Cruze	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Restricted permeability	0.40
	Restricted permeability	0.40	Restricted permeability	0.40		
	Content of large stones	0.16	Content of large stones	0.16		
SfE:						
Shelocta	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.10	Content of large stones	0.10		
Cruze	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Restricted permeability	0.40
	Restricted permeability	0.40	Restricted permeability	0.40		
	Content of large stones	0.11	Content of large stones	0.11		
Sh:						
Shoals	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
					Flooding	1.00
SkA:						
Sleeth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
St:						
Stonelick	Not limited		Very limited		Very limited	
			Too sandy	1.00	Cutbanks cave	1.00
					Flooding	1.00
TaC2:						
Tarlton	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Depth to saturated zone	1.00	Depth to bedrock	0.04
	Depth to saturated zone	0.68	Restricted permeability	0.91		

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ThA:						
Thackery------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Depth to saturated zone	1.00		
ThB:						
Thackery------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Slope	0.04
Ud, Uf, Ug:						
Udorthents----------	Not rated		Not rated		Not rated	
Um:						
Urban land----------	Not rated		Not rated		Not rated	
Aetna---------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
UoC:						
Urban land----------	Not rated		Not rated		Not rated	
Amanda--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Slope	0.63
					Restricted permeability	0.22
UrB:						
Urban land----------	Not rated		Not rated		Not rated	
Bennington----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Restricted permeability	0.91		
UtC:						
Urban land----------	Not rated		Not rated		Not rated	
Cardington----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Slope	0.63
	Restricted permeability	0.40	Restricted permeability	0.40	Restricted permeability	0.40

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UuB:						
Urban land----------	Not rated		Not rated		Not rated	
Celina--------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
UxB:						
Urban land----------	Not rated		Not rated		Not rated	
Ockley--------------	Very limited		Very limited		Not limited	
	Water erosion	1.00	Water erosion	1.00		
			Too sandy	1.00		
Uy:						
Urban land----------	Not rated		Not rated		Not rated	
Udorthents----------	Not rated		Not rated		Not rated	
WdA:						
Wea-----------------	Not limited		Not limited		Not limited	
WeC:						
Wellston------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	0.61	Depth to bedrock	0.61		
WfC:						
Wellston------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	0.08	Depth to bedrock	0.08		
Cruze---------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	1.00	Restricted permeability	0.40
	Restricted permeability	0.40	Restricted permeability	0.40		
	Content of large stones	0.15	Content of large stones	0.15		
Wg:						
Westland------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
			Ponding	1.00	Frost action	1.00
Wk:						
Westland------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
			Ponding	1.00	Frost action	1.00

Table 21b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ZnB:						
Zanesville----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Rooting depth	1.00	Restricted permeability	0.40
	Depth to saturated zone	0.47	Depth to saturated zone	1.00	Slope	0.04
	Restricted permeability	0.40	Restricted permeability	0.40		
ZnC2:						
Zanesville----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Rooting depth	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Restricted permeability	0.40
	Depth to saturated zone	0.47	Depth to saturated zone	1.00		
	Restricted permeability	0.40	Restricted permeability	0.40		

Table 22.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
AfB:												
Alford----------	0-13	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	23-40	3-15
	13-46	Silty clay loam, silt loam	CL	A-4, A-6, A-7-6	0	0	100	100	95-100	90-100	25-50	8-32
	46-76	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	70-100	15-40	3-20
	76-80	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-100	15-40	3-20
AfC2:												
Alford----------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	23-40	3-15
	8-74	Silty clay loam, silt loam	CL	A-4, A-6, A-7-6	0	0	100	100	95-100	90-100	25-50	8-32
	74-80	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-100	15-40	3-20
Ag:												
Aetna-----------	0-7	Silt loam	CL, ML	A-4	0	0	100	90-100	80-95	70-85	30-45	7-19
	7-23	Silt loam, silty clay loam	CL, ML	A-4, A-6, A-7	0	0	100	90-100	80-95	70-85	30-45	7-19
	23-63	Silty clay loam, silt loam	CL, ML	A-4, A-7, A-6	0	0	100	90-100	80-95	70-85	30-45	7-19
	63-80	Silty clay loam, silt loam	CL, ML	A-4, A-6, A-7	0	0	100	90-100	80-95	70-85	30-45	7-19
Ah:												
Aetna-----------	0-7	Silt loam	ML, CL	A-4	0	0	100	90-100	80-95	70-85	30-45	7-19
	7-23	Silty clay loam, silt loam	ML, CL	A-4, A-6, A-7	0	0	100	90-100	80-95	70-85	30-45	7-19
	23-63	Silty clay loam, clay loam	ML, CL	A-4, A-6, A-7	0	0	100	90-100	80-95	70-85	30-45	7-19
	63-80	Silt loam	CL, ML	A-4, A-6, A-7	0	0	100	90-100	80-95	70-85	30-45	7-19

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
AmB:												
Amanda----------	0-9	Silt loam	ML, CL-ML, CL	A-4	0	0-5	90-100	85-100	75-100	55-90	20-35	3-10
	9-24	Silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0-5	90-100	85-100	80-100	60-95	25-40	5-18
	24-43	Clay loam, loam	ML, CL, CL-ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	43-80	Loam, silt loam	ML, CL-ML, CL	A-4, A-6	0	0-5	85-100	75-95	65-95	50-85	20-35	3-11
AmB2:												
Amanda----------	0-7	Silt loam	CL, ML, CL-ML	A-4	0	0-5	90-100	85-100	75-100	55-90	20-35	3-10
	7-20	Silt loam, loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	85-100	80-100	60-95	25-40	5-18
	20-62	Clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	62-80	Loam, silt loam	CL-ML, ML, CL	A-4	0	0-5	85-100	75-95	65-95	50-85	20-35	3-10
AmC2:												
Amanda----------	0-8	Silt loam	ML, CL-ML, CL	A-4	0	0-5	90-100	85-100	75-100	55-90	20-35	3-10
	8-34	Silt loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0-5	90-100	85-100	80-100	60-95	25-40	5-18
	34-55	Loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	55-80	Loam, silt loam	CL, CL-ML, ML	A-4	0	0-5	85-100	75-95	65-95	50-85	20-35	3-10
AmD2:												
Amanda----------	0-4	Silt loam	CL, ML, CL-ML	A-4	0	0-5	90-100	85-100	75-100	55-90	20-35	3-10
	4-20	Silty clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	20-28	Clay loam, silt loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	65-95	50-85	20-35	3-11
	28-80	Loam	CL-ML, ML, CL	A-4	0	0-5	85-100	75-95	65-95	50-85	20-35	3-10

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
AmE2:												
Amanda----------	0-7	Silt loam	CL-ML, ML, CL	A-4	0	0-5	90-100	85-100	75-100	55-90	20-35	3-10
	7-30	Silty clay loam, loam	ML, CL-ML, CL	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	30-33	Silty clay loam, silt loam	ML, CL-ML, CL	A-4, A-6	0	0-5	85-100	75-95	65-95	50-85	20-35	3-11
	33-80	Loam	CL-ML, CL, ML	A-4, A-6	0	0-5	85-100	75-95	65-95	50-85	20-35	3-11
AoC3:												
Amanda----------	0-6	Silty clay loam	CL	A-6	0	0-5	90-100	85-100	85-100	75-95	30-40	10-18
	6-24	Clay loam, loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	24-30	Clay loam, silt loam	CL-ML, ML, CL	A-4, A-6	0	0-5	85-100	75-95	65-95	50-85	20-35	3-11
	30-80	Loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	45-85	45-85	20-35	3-10
AoD3:												
Amanda----------	0-5	Silty clay loam	CL	A-6	0	0-5	90-100	85-100	85-100	75-95	30-40	10-18
	5-30	Clay loam, loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	30-36	Clay loam, silt loam	ML, CL-ML, CL	A-4, A-6	0	0-5	85-100	75-95	65-95	50-85	20-35	3-11
	36-80	Loam	CL	A-4, A-6	0	0-5	85-100	75-95	65-95	50-85	20-35	3-11
ApB2:												
Amanda----------	0-6	Silt loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	75-100	55-90	20-35	3-10
	6-52	Clay loam, loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	52-80	Loam, silt loam	CL, CL-ML, ML	A-4	0	0-5	85-100	75-95	65-95	50-85	20-35	3-10

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
ApB2:												
Loudonville-----	0-5	Silt loam	ML, CL-ML	A-4	0	0-1	95-100	80-100	70-95	55-90	20-35	2-10
	5-25	Silty clay loam, silt loam	CL, CL-ML	A-4, A-6, A-7	0	0-2	90-100	80-100	65-90	50-85	25-42	6-18
	25-39	Clay loam, loam, silt loam, channery loam	GM, ML, SM, CL	A-4	0	2-25	55-90	45-80	40-75	35-60	20-35	NP-15
	39-49	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
ApC2:												
Amanda----------	0-10	Loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	75-100	55-90	20-35	3-10
	10-39	Clay loam, loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	85-100	80-100	60-95	25-40	5-18
	39-70	Clay loam, loam	CL-ML, ML, CL	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	70-80	Silt loam, loam	CL, CL-ML, ML	A-4	0	0-5	85-100	75-95	65-95	50-85	20-35	3-10
Loudonville-----	0-6	Silt loam	ML, CL-ML	A-4	0	0-1	95-100	80-100	70-95	55-90	20-35	2-10
	6-35	Loam, silt loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6, A-7	0	0-2	90-100	80-100	65-90	50-85	25-42	6-18
	35-48	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
ApD2:												
Amanda----------	0-10	Silt loam	CL, ML, CL-ML	A-4	0	0-5	90-100	85-100	75-100	55-90	20-35	3-10
	10-30	Silty clay loam, clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	30-80	Loam, silt loam	CL, CL-ML, ML	A-4	0	0-5	85-100	75-95	65-95	50-85	20-35	3-10

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
ApD2:												
Loudonville-----	0-4	Clay loam	CL-ML, ML, CL	A-4, A-6	0	0-1	95-100	80-100	70-95	55-90	20-35	2-11
	4-20	Clay loam, loam, silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7	0	0-2	90-100	80-100	65-90	50-85	25-42	6-18
	20-36	Loam, silt loam, channery loam, channery clay loam	CL, SM, ML, GM	A-4	0	2-25	55-90	45-80	40-75	35-60	20-35	NP-15
	36-39	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
ArC2:												
Amanda----------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	75-100	55-90	20-35	3-10
	8-44	Silt loam, clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	44-80	Loam, silt loam	CL-ML, ML, CL	A-4	0	0-5	85-100	75-95	65-95	50-85	20-35	3-10
Ockley----------	0-5	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	95-100	85-100	70-100	50-90	23-40	3-15
	5-22	Silt loam, clay loam, sandy clay loam	SC-SM, CL, CL-ML, SC	A-2, A-4, A-6, A-7-6	0	0-1	90-100	85-100	70-100	30-95	20-50	5-35
	22-47	Clay loam, gravelly clay loam, sandy clay loam	CL, ML, SC, SM	A-2, A-4, A-6, A-7-6	0	0-2	70-85	45-85	25-75	15-60	10-50	NP-35
	47-80	Stratified loamy coarse sand, very gravelly coarse sand, gravelly loamy coarse sand	GP, GW-GM, SP-SM, SW	A-1	0-2	1-10	30-70	20-55	10-30	2-10	0-0	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
ArD2:												
Amanda----------	0-6	Silt loam	ML, CL, CL-ML	A-4	0	0-5	90-100	85-100	75-100	55-90	20-35	3-10
	6-36	Gravelly clay loam, clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	36-80	Loam, silt loam	CL, CL-ML, ML	A-4	0	0-5	85-100	75-95	65-95	50-85	20-35	3-10
Ockley----------	0-6	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	85-100	70-100	50-90	23-40	3-15
	6-24	Gravelly clay loam, silt loam, clay loam	SC, CL-ML, SC-SM, CL	A-4, A-6, A-7-6, A-2	0	0-1	90-100	85-100	70-100	30-95	20-50	5-35
	24-35	Sandy clay loam, loam, clay loam, gravelly sandy loam	SM, SC, ML, CL	A-2, A-4, A-6, A-7-6	0	0-2	70-85	45-85	25-75	15-60	10-50	NP-35
	35-80	Stratified very gravelly coarse sand to gravelly loamy coarse sand, very gravelly coarse sand, fine sandy loam, loam	SM, SW, SP-SM, GW-GM, GP	A-1, A-4	0-2	1-10	30-70	20-55	10-38	2-36	0-0	NP
Bb:												
Beaucoup--------	0-20	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	30-45	15-25
	20-54	Silt loam, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	30-45	15-30
	54-80	Stratified silty clay loam, very fine sandy loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	90-100	65-95	25-45	5-25

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
BeA:												
Bennington------	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0-2	95-100	90-100	85-100	65-90	22-38	3-14
	9-46	Silty clay, silty clay loam, clay loam, clay	CH, CL	A-6, A-7, A-7-6	0	0-2	85-100	80-100	75-100	70-95	30-52	12-30
	46-80	Loam, clay loam, silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-2	80-100	75-100	70-100	60-90	25-40	6-18
BeB:												
Bennington------	0-9	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	85-100	65-90	22-38	3-14
	9-30	Silty clay loam, clay loam, clay	CL, CH	A-6, A-7	0	0-2	85-100	80-100	75-100	70-95	30-52	12-30
	30-80	Clay loam, silty clay loam, loam	CL, CL-ML	A-4, A-6	0	0-2	80-100	75-100	70-100	60-90	25-40	6-18
BkF:												
Berks-----------	0-4	Channery silt loam	GC, GM, ML, SC, CL-ML	A-2, A-4	0	0-30	50-80	45-70	40-60	30-55	25-36	5-10
	4-25	Very channery silt loam, extremely channery silt loam, channery loam, very channery loam, channery silt loam	GM, SM	A-1, A-2, A-4	0	0-40	35-65	25-55	20-40	15-36	24-38	2-10
	25-28	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	28-30	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
CaB:												
Cardington------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0-2	95-100	90-100	80-100	65-90	22-38	3-14
	8-33	Silty clay loam, clay loam, silty clay	ML, CL	A-6, A-7, A-7-6	0	0-2	80-100	75-100	70-100	65-90	34-49	10-22
	33-80	Clay loam, silt loam, loam	CL-ML, CL, ML	A-4, A-6	0	0-5	80-100	75-100	70-95	65-85	22-40	3-18
CaB2:												
Cardington------	0-6	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0-2	95-100	90-100	80-100	65-90	22-38	3-14
	6-30	Silty clay loam, clay loam, silty clay	CL, ML	A-6, A-7, A-7-6	0	0-2	80-100	75-100	70-100	65-90	34-49	10-22
	30-80	Clay loam, silty clay loam, loam	ML, CL-ML, CL	A-4, A-6	0	0-5	80-100	75-100	70-95	65-85	22-40	3-18
CaC2:												
Cardington------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0-2	95-100	90-100	80-100	65-90	22-38	3-14
	8-28	Silty clay loam, clay loam, silty clay	CL, ML	A-6, A-7, A-7-6	0	0-2	80-100	75-100	70-100	65-90	34-49	10-22
	28-80	Clay loam, silty clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0-5	80-100	75-100	70-95	65-85	22-40	3-18
CaD2:												
Cardington------	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0-2	95-100	90-100	80-100	65-90	22-38	3-14
	9-30	Silty clay loam, clay loam, silty clay	ML, CL	A-6, A-7, A-7-6	0	0-2	80-100	75-100	70-100	65-90	34-49	10-22
	30-80	Clay loam, silty clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0-5	80-100	75-100	70-95	65-85	22-40	3-18

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Cb:												
Carlisle--------	0-12	Muck	PT	A-8	0	0	0	0	0	0	---	---
	12-30	Muck	PT	A-8	0	0	0	0	0	0	---	---
	30-80	Muck	PT	A-8	0	0	0	0	0	0	---	---
CdF:												
Cedarfalls------	0-5	Coarse sandy loam	SM	A-2, A-4	0	0	90-100	85-100	45-65	25-40	0-25	NP
	5-20	Sandy loam, coarse sandy loam, loamy coarse sand	SM	A-1-b, A-2-4, A-4	0	0	90-100	85-100	45-65	15-40	0-25	NP
	20-57	Coarse sand, gravelly loamy coarse sand, sand	SM	A-1-b, A-2-4, A-3, A-2	0	0-40	80-100	70-100	40-60	5-25	0-25	NP
	57-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
CeB:												
Celina----------	0-9	Silt loam	ML, CL	A-4	0	0	100	90-100	90-100	70-85	26-40	3-15
	9-36	Clay, clay loam, silty clay loam	CL, CH	A-6, A-7, A-7-6	0	0	100	90-100	80-95	70-85	32-51	12-28
	36-80	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	75-95	75-90	65-90	50-80	20-36	4-16
CfB:												
Centerburg------	0-8	Silt loam	ML, CL-ML, CL	A-4	0	0-5	90-100	85-100	80-100	65-90	20-30	3-10
	8-19	Clay loam, silty clay loam, silt loam	CL, CL-ML, ML	A-4, A-6	0	0-5	90-100	75-100	70-100	55-90	22-38	3-14
	19-46	Silty clay loam, silt loam, clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-85	22-38	3-14
	46-80	Loam, silt loam	CL, CL-ML, ML	A-4	0	0-5	85-100	75-95	65-90	50-80	22-38	3-14

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
CfB2:												
Centerburg------	0-6	Silt loam	ML, CL-ML, CL	A-4	0	0-5	90-100	85-100	80-100	65-90	20-30	3-10
	6-32	Clay loam, silty clay loam, silt loam	CL, CL-ML, ML	A-4, A-6	0	0-5	90-100	75-100	70-100	55-90	22-38	3-14
	32-80	Loam, silt loam	CL, CL-ML, ML	A-4	0	0-5	85-100	75-95	65-90	50-80	20-30	3-10
CfC2:												
Centerburg------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	80-100	65-90	20-30	3-10
	8-16	Clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-85	22-38	3-14
	16-44	Clay loam, silty clay loam, loam, silt loam	CL, ML, CL-ML	A-4, A-6	0	0-5	85-100	75-95	65-90	50-80	20-30	3-11
	44-80	Loam, silt loam	ML, CL, CL-ML	A-4	0	0-5	85-100	75-95	65-90	50-80	20-30	3-10
Cg:												
Chagrin---------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	95-100	85-100	80-100	70-90	20-35	2-10
	8-36	Silt loam, loam, sandy loam	ML, SM, CL	A-2, A-4, A-6	0	0	90-100	75-100	55-90	30-80	20-40	NP-15
	36-80	Stratified gravelly fine sand to silt loam	ML, SM, SP-SM, CL-ML	A-2, A-4	0	0	75-100	65-100	40-85	10-80	17-37	NP-12
CkC2:												
Cincinnati------	0-9	Silt loam	CL, ML	A-4, A-6	0	0	100	95-100	90-100	80-100	25-40	3-16
	9-30	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	85-100	70-100	24-40	5-15
	30-46	Clay loam, loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7-6	0	0	85-100	75-100	70-95	55-85	24-50	5-29
	46-94	Clay loam, loam	CL, CL-ML	A-4, A-6, A-7-6	0	0-2	85-100	75-95	70-90	55-80	25-50	5-27

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
CmC2:												
Cincinnati------	0-8	Silt loam	CL, ML	A-4, A-6	0	0	100	95-100	90-100	80-100	25-40	3-16
	8-22	Silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-100	70-100	24-40	5-15
	22-50	Channery silt loam, channery clay loam, very channery clay loam	CL-ML, CL	A-4, A-6, A-7-6	0	0	85-100	75-100	70-95	55-85	24-50	5-29
	50-80	Clay loam, loam	CL-ML, CL	A-4, A-6, A-7-6	0	0-2	85-100	75-95	70-90	55-80	25-50	5-27
Wellston--------	0-7	Silt loam	ML, CL	A-4	0	0	95-100	90-100	85-100	70-95	25-35	3-13
	7-42	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0-5	75-100	70-100	60-95	60-90	25-40	5-20
	42-48	Silt loam, loam, gravelly loam	SC, SC-SM, CL-ML, CL	A-4, A-6	0	0-10	65-90	65-90	60-90	40-65	20-35	5-15
	48-72	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cn:												
Condit----------	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0-2	95-100	95-100	90-100	80-90	22-40	3-16
	9-30	Silty clay loam, clay loam, silty clay	CH, CL	A-6, A-7, A-7-6	0	0-2	95-100	85-100	80-100	70-90	35-55	12-28
	30-44	Silty clay loam, clay loam, loam	CL, CL-ML	A-4, A-6	0	0-2	90-100	80-100	70-95	65-85	25-40	6-18
	44-80	Silty clay loam, clay loam, loam	CL, CL-ML	A-4, A-6	0	0-2	90-100	80-100	70-95	65-85	25-40	6-18
CoB:												
Corwin----------	0-15	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0-1	98-100	95-100	90-100	55-90	15-40	3-15
	15-38	Silty clay loam, clay loam, loam	CL-ML, CL	A-4, A-6, A-7-6	0	0-1	90-100	85-100	75-95	50-80	20-50	5-30
	38-80	Loam, silt loam	ML, CL, SC, SM, CL-ML	A-4, A-6	0-1	0-3	90-100	85-95	75-90	45-80	15-40	NP-25

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
CrA:												
Crosby----------	0-8	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	95-100	90-100	80-95	60-85	15-40	NP-15
	8-38	Silty clay loam, clay	CH, CL	A-6, A-7-6	0-1	0-3	90-100	85-100	75-95	55-90	30-60	10-35
	38-80	Loam, fine sandy loam	SC, SM, CL, ML	A-4, A-6	0-1	0-3	85-100	80-98	65-90	40-70	15-35	NP-20
CsA:												
Canal-----------	0-9	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	24-40	4-16
	9-14	Silty clay loam, silt loam	CL, ML	A-4, A-6, A-7	0	0	100	100	90-100	80-100	25-50	3-23
	14-45	Silt loam, loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	80-100	60-100	20-40	3-18
	45-80	Stratified silty clay	CH, CL	A-7, A-7-6	0	0	100	100	90-100	80-100	40-60	20-35
Ee:												
Eel-------------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	60-90	25-40	5-20
	8-30	Loam, silt loam, very fine sandy loam	CL, CL-ML	A-4, A-6, A-7-6	0	0	100	100	85-100	70-85	25-50	5-25
	30-55	Stratified loam to silt loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-2-4, A-2-6, A-4, A-6	0	0	100	90-100	55-95	30-80	25-40	5-15
	55-80	Stratified very gravelly coarse sandy loam	GP-GM, SP-SM	A-1, A-2, A-4	0	0-15	30-70	20-50	5-40	0-36	15-25	3-10

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
EkA:												
Eldean----------	0-8	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	85-100	80-100	70-100	55-90	20-40	4-14
	8-34	Clay, sandy clay, gravelly clay loam, gravelly clay	CL, ML, CH	A-6, A-7, A-7-6	0	0-5	75-100	60-100	55-95	50-80	38-58	12-32
	34-80	Stratified sand to extremely gravelly coarse sandy loam, very gravelly sandy loam	GM, SM, GP-GM, SP-SM	A-1, A-2	0	0-15	30-70	20-50	5-40	0-35	0-14	NP
EkB:												
Eldean----------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	85-100	80-100	70-100	55-90	20-40	4-14
	7-35	Clay, sandy clay, gravelly clay loam, gravelly clay, gravelly sandy clay loam	CL, ML	A-6, A-7	0	0-5	75-100	60-100	55-95	50-80	38-50	12-23
	35-80	Stratified gravelly sand to extremely gravelly coarse sandy loam	SP-SM, GM, GP-GM, SM	A-1, A-2	0	0-15	30-70	20-50	5-40	0-35	0-14	NP
EnC2:												
Eldean----------	0-8	Gravelly loam	CL-ML, GM, ML, SM, CL	A-4, A-6	0	0-10	65-90	60-80	55-75	40-60	20-35	NP-12
	8-34	Clay, sandy clay, gravelly clay loam, gravelly clay	CL, ML, CH	A-6, A-7, A-7-6	0	0-5	75-100	60-100	55-95	50-80	38-58	12-32
	34-80	Stratified very gravelly sand to extremely gravelly coarse sandy loam to very gravelly sandy loam, very gravelly sand	GM, SP-SM, SM, GP-GM	A-1, A-2	0	0-15	30-70	20-50	5-40	0-35	0-14	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Eu:												
Euclid----------	0-15	Silt loam	ML, CL, CL-ML	A-4	0	0	100	100	95-100	85-100	20-35	NP-12
	15-50	Silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	80-100	25-40	4-15
	50-80	Stratified silt loam, silty clay loam, loam, clay loam, gravelly loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	80-100	70-95	20-35	2-13
FbA:												
Fitchville------	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	24-40	4-16
	10-63	Silt loam, silty clay loam	ML, CL	A-4, A-6, A-7	0	0	100	100	90-100	80-100	28-50	5-23
	63-80	Silt loam, loam, silty clay loam	CL-ML, ML, CL	A-4, A-6	0	0	95-100	90-100	80-100	60-100	20-40	3-18
FhA:												
Fox-------------	0-10	Loam	CL, CL-ML, ML	A-4	0	0	95-100	95-100	85-95	65-90	0-25	3-8
	10-35	Clay loam, sandy clay loam, gravelly loam, gravelly clay loam, very gravelly clay loam	GC, SC, CL	A-6, A-7, A-2	0-1	0-5	65-100	55-100	30-100	15-80	22-45	10-25
	35-80	Stratified gravelly coarse sand to sand, sand and gravel	GP-GM, SP, SP-SM, GP	A-1, A-2, A-3	0-3	0-10	30-100	20-95	10-90	2-10	0-14	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
FhB:												
Fox-------------	0-10	Loam	CL, CL-ML, ML	A-4	0	0	95-100	95-100	85-95	65-90	0-25	3-8
	10-33	Clay loam, gravelly clay loam, very gravelly clay loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-5	65-100	55-100	30-100	15-80	22-45	10-25
	33-80	Stratified coarse sand to sand to very gravelly loamy sand, sand and gravel	GP, GP-GM, SP-SM, SP	A-1, A-2, A-3	0-3	0-10	30-100	20-95	10-90	2-10	0-14	NP
FhC2:												
Fox-------------	0-8	Loam	ML, CL-ML, CL	A-4	0	0	95-100	95-100	85-95	65-90	0-25	3-8
	8-30	Clay loam, gravelly loam, gravelly clay loam, very gravelly clay loam	GC, CL, SC	A-2, A-6, A-7	0-1	0-5	65-100	55-100	30-100	15-80	22-45	10-25
	30-80	Stratified coarse sand to gravelly sand to very gravelly sand to sand	GP-GM, GP, SP, SP-SM	A-1, A-2, A-3	0-3	0-10	30-100	20-95	10-90	2-10	0-14	NP
FhD2:												
Fox-------------	0-5	Loam	CL, CL-ML, ML	A-4	0	0	95-100	95-100	85-95	65-90	0-25	3-8
	5-9	Silty clay loam, silt loam, loam	CL	A-6, A-7	0-1	0	95-100	85-100	60-100	50-90	22-50	10-25
	9-33	Clay loam, gravelly loam	SC, CL, GC	A-2, A-6, A-7	0-1	0-5	65-100	55-100	30-100	15-80	22-45	10-25
	33-80	Stratified coarse sand to sand to gravelly loamy sand	SP-SM, SP, GP, GP-GM	A-1, A-2, A-3	0-3	0-10	30-100	20-95	10-90	2-10	0-14	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
FmA:												
Fox	0-9	Silt loam	CL, CL-ML, ML	A-4	0	0	95-100	95-100	85-95	65-90	0-25	3-8
	9-20	Silty clay loam, silt loam, clay loam, gravelly silty clay loam, gravelly silt loam, gravelly clay loam	CL	A-6, A-7	0-1	0	95-100	85-100	60-100	50-90	22-50	10-25
	20-34	Sandy loam, sandy clay loam, gravelly sandy loam, gravelly sandy clay loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-5	65-100	55-100	30-100	15-80	22-45	10-25
	34-80	Stratified coarse sand to gravelly sand to very gravelly loamy coarse sand, very gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1, A-2, A-3	0-3	0-10	30-100	20-95	10-90	2-10	0-14	NP
FmB:												
Fox	0-10	Silt loam	CL, CL-ML, ML	A-4	0	0	95-100	95-100	85-95	65-90	0-25	3-8
	10-26	Silty clay loam, silt loam, loam, clay loam	CL	A-6, A-7	0-1	0	95-100	85-100	60-100	50-90	22-50	10-25
	26-37	Clay loam, loam, gravelly loam, gravelly clay loam	CL, GC, SC	A-2, A-6, A-7	0-1	0-5	65-100	55-100	30-100	15-80	22-45	10-25
	37-80	Stratified very gravelly coarse sand to sand, coarse sand	GP, GP-GM, SP, SP-SM	A-1, A-2, A-3	0-3	0-10	30-100	20-95	10-90	2-10	0-14	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
GaB:												
Gallman---------	0-13	Silt loam	CL, CL-ML, ML	A-4	0	0	75-100	70-100	65-100	50-100	20-35	3-10
	13-44	Silty clay loam, clay loam, sandy clay loam	CL, GC, GM, SC	A-2, A-4, A-6	0	0	70-100	65-95	55-90	30-70	30-40	7-17
	44-71	Stratified sandy loam to sandy clay loam to gravelly clay loam, loam, silt loam, gravelly loam	CL, ML, SC, SM	A-2, A-4, A-6	0	0	60-100	45-90	40-80	30-65	25-35	3-14
	71-80	Gravelly loam, loam	CL, ML, SC, SM	A-4, A-6, A-2	0	0	60-100	45-90	40-80	30-65	25-35	3-14
GcD:												
Germano---------	0-3	Sandy loam	SC-SM, ML, CL-ML	A-4	0	0-10	85-100	80-100	70-95	50-75	15-25	NP-7
	3-6	Sandy loam	SC-SM	A-4	0	0-10	85-100	80-100	70-95	50-75	15-25	NP-7
	6-28	Sandy loam, fine sandy loam, channery loam, channery sandy loam	GM, SC-SM, SM, CL-ML	A-1-b, A-2-4, A-4	0	0-20	65-100	50-95	30-75	15-50	15-30	NP-7
	28-42	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	42-44	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
GcE:												
Germano---------	0-6	Sandy loam	CL-ML, ML, SC-SM	A-4	0	0-10	85-100	80-100	70-95	50-75	15-25	NP-7
	6-20	Sandy loam, fine sandy loam, channery loam	GM, SC-SM, SM, CL-ML	A-1-b, A-2-4, A-4	0	0-20	65-100	50-95	30-75	15-50	15-30	NP-7
	20-38	Channery fine sandy loam, very channery sandy loam, extremely channery loamy sand, channery sandy loam	GM, SC-SM, SM	A-1, A-2-4, A-3, A-2	0-5	0-30	30-85	10-75	10-70	5-35	15-20	NP-5
	38-48	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	48-50	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
GdF:												
Germano---------	0-5	Channery sandy loam	SC-SM, CL-ML, ML	A-4	0	0-10	85-100	80-100	70-95	50-75	15-25	NP-7
	5-32	Channery fine sandy loam, very channery sandy loam, extremely channery loamy sand, channery sandy loam	GM, SC-SM, SM	A-1, A-2-4, A-3, A-4	0-5	0-30	30-85	10-75	10-70	5-36	15-20	NP-5
	32-36	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	36-40	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Gf:												
Gessie----------	0-10	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	100	95-100	90-100	55-100	20-40	3-15
	10-42	Silt loam, loam, stratified silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	55-100	20-40	3-15
	42-80	Stratified loamy sand to sandy loam, silt loam	CL, ML, SC, SM, CL-ML	A-2-4, A-4, A-6	0	0	100	85-100	65-100	15-100	0-40	NP-15
Gg:												
Gessie----------	0-10	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	100	95-100	90-100	55-100	20-40	3-15
	10-50	Silt loam, loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	55-100	20-40	3-15
	50-80	Stratified sand to silt loam, silt loam	CL, ML, SC, SM, CL-ML	A-2-4, A-4, A-6	0	0	100	85-100	65-100	15-100	0-40	NP-15
GkC:												
Gilpin----------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0-5	80-95	75-90	70-85	65-80	20-40	4-15
	8-30	Channery loam, channery silt loam, silty clay loam, clay loam, channery clay loam	CL-ML, GC, CL, SC	A-2, A-4, A-6	0	0-30	50-95	45-90	35-85	30-80	20-40	4-15
	30-36	Channery loam, very channery silt loam, very channery silty clay loam, very channery loam	GC, GC-GM, CL	A-1, A-2, A-4, A-6	0	0-35	25-65	20-60	15-55	15-51	20-40	4-15
	36-39	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
GkD:												
Gilpin----------	0-7	Silt loam	CL-ML, CL	A-4, A-6	0	0-5	80-95	75-90	70-85	65-80	20-40	4-15
	7-29	Channery loam, channery silt loam, silty clay loam, silt loam	SC, CL, CL-ML, GC	A-2, A-4, A-6	0	0-30	50-95	45-90	35-85	30-80	20-40	4-15
	29-31	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
GnB:												
Glenford--------	0-15	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	80-100	25-40	4-14
	15-40	Silty clay loam, silt loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	95-100	80-100	25-45	5-18
	40-67	Silt loam, silty clay loam	ML, CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	75-100	20-40	3-18
	67-80	Stratified sandy loam to loam to silt loam to silty clay loam, silty clay loam, fine sandy loam	CL-ML, CL, ML	A-4, A-6	0	0	95-100	90-100	85-100	70-100	20-40	3-15
GnC2:												
Glenford--------	0-5	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	80-100	25-40	4-14
	5-9	Silty clay loam, silt loam	CL-ML, ML, CL	A-4, A-6, A-7	0	0	100	100	95-100	80-100	25-45	5-18
	9-49	Silt loam, silty clay loam	CL-ML, CL, ML	A-4, A-6	0	0	100	95-100	90-100	75-100	20-40	3-18
	49-80	Stratified sandy loam to loam to silt loam to silty clay loam, silty clay loam, fine sandy loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	85-100	70-100	20-40	3-15

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
HhC2:												
Hickory	0-8	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	8-54	Clay loam, silty clay loam, gravelly clay loam, loam	CL	A-6, A-7	0	0-5	85-100	70-95	45-95	25-75	30-50	15-30
	54-80	Loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
HkE:												
Hickory	0-6	Loam	ML, CL, CL-ML	A-4, A-6	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	6-50	Gravelly clay loam, loam	CL	A-6, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	50-80	Gravelly loam	SC-SM, CL, CL-ML, SC	A-2, A-4, A-6	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
Germano	0-5	Sandy loam	SM, SC-SM	A-2-4, A-4	0	0-10	85-100	80-100	50-70	25-40	15-20	NP-5
	5-28	Sandy loam, fine sandy loam, channery loam, channery sandy loam	GM, SC-SM, SM, CL-ML	A-1-b, A-2-4, A-4	0	0-20	65-100	50-95	30-75	15-50	15-30	NP-7
	28-40	Channery fine sandy loam, very channery sandy loam, extremely channery loamy sand, very channery loamy sand	GM, SC-SM, SM	A-1, A-2-4, A-3, A-4	0-5	0-30	30-85	10-75	10-70	5-36	15-20	NP-5
	40-43	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	43-44	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
HmD2:												
Hickory---------	0-7	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	7-50	Clay loam, silty clay loam, gravelly clay loam, silt loam	CL	A-6, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	50-80	Loam, clay loam, gravelly clay loam	CL, SC-SM, CL-ML, SC	A-2, A-4, A-6	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
Gilpin----------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0-5	80-95	75-90	70-85	65-80	20-40	4-15
	8-18	Channery loam, channery silt loam, silty clay loam, silt loam	GC, CL, CL-ML, SC	A-2, A-4, A-6	0	0-30	50-95	45-90	35-85	30-80	20-40	4-15
	18-29	Channery loam, very channery silt loam, very channery silty clay loam, channery silt loam	CL, GC-GM, GC	A-1, A-2, A-4, A-6	0	0-35	25-65	20-60	15-55	15-52	20-40	4-15
	29-32	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
HnC2:												
Homewood--------	0-10	Silt loam	ML, CL	A-4	0	0	95-100	90-100	85-100	75-100	25-35	2-12
	10-22	Loam, silt loam, clay loam, silty clay loam	CL, ML	A-4, A-6	0	0-2	90-100	85-100	75-100	55-80	30-40	5-15
	22-48	Loam, clay loam, gravelly silt loam, channery clay loam	CL-ML, ML, SC-SM, CL	A-4, A-6	0	0-5	70-100	60-95	55-90	45-80	22-38	3-14
	48-80	Loam, clay loam, gravelly silt loam	SC, CL-ML, SC-SM, CL	A-4, A-6	0	0-10	70-100	55-95	50-90	40-80	20-35	5-15

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
HoD2:												
Homewood--------	0-9	Silt loam	ML, CL	A-4	0	0	95-100	90-100	85-100	75-100	25-35	2-12
	9-28	Silty clay loam, silt loam, clay loam, channery clay loam	CL, ML	A-4, A-6	0	0-2	90-100	85-100	75-100	55-80	30-40	5-15
	28-42	Loam, clay loam, gravelly silt loam, channery clay loam	CL, CL-ML, ML, SC-SM	A-4, A-6	0	0-5	70-100	60-95	55-90	45-80	22-38	3-14
	42-80	Loam, clay loam, gravelly silt loam, channery clay loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0	0-10	70-100	55-95	50-90	40-80	20-35	5-15
Gilpin----------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0-5	80-95	75-90	70-85	65-80	20-40	4-15
	8-29	Channery loam, channery silt loam, silty clay loam, very channery loam, very channery silt loam	GC, SC, CL-ML, CL	A-2, A-4, A-6	0	0-30	50-95	45-90	35-85	30-80	20-40	4-15
	29-32	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
HoE2:												
Homewood--------	0-7	Silt loam	CL, ML	A-4	0	0	95-100	90-100	85-100	75-100	25-35	2-12
	7-26	Loam, silt loam, clay loam, silty clay loam	CL, ML	A-4, A-6	0	0-2	90-100	85-100	75-100	55-80	30-40	5-15
	26-41	Loam, clay loam, gravelly silt loam, channery clay loam	CL, CL-ML, ML, SC-SM	A-4, A-6	0	0-5	70-100	60-95	55-90	45-80	22-38	3-14
	41-80	Loam, clay loam, gravelly silt loam, channery clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-10	70-100	55-95	50-90	40-80	20-35	5-15

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
HoE2:												
Gilpin----------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0-5	80-95	75-90	70-85	65-80	20-40	4-15
	7-29	Channery loam, channery silt loam, silty clay loam, very channery loam, very channery silt loam	CL, GC, SC, CL-ML	A-2, A-4, A-6	0	0-30	50-95	45-90	35-85	30-80	20-40	4-15
	29-32	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
JeB:												
Jeneva----------	0-8	Silt loam	ML, CL	A-4	0	0	100	100	90-100	70-100	20-30	3-14
	8-54	Silt loam, silty clay loam	CL, CL-ML	A-6	0	0	100	100	90-100	80-100	22-38	3-14
	54-63	Silt loam, loam	CL, ML, CL-ML	A-4	0	0	85-100	75-95	70-90	55-80	18-30	3-10
	63-75	Silt loam	CL, ML, CL-ML	A-4	0	0	90-100	75-95	70-90	55-80	18-30	3-10
	75-93	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	75-95	70-90	55-80	22-38	5-16
	93-115	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Km:												
Kokomo----------	0-8	Silt loam	CL	A-6	0	0	90-100	85-100	70-100	50-85	25-40	10-20
	8-80	Silty clay loam, clay loam, silty clay	CH, CL	A-7, A-7-6	0	0-1	90-100	85-100	75-100	55-95	40-60	20-35
	80-88	Loam	SC, CL, CL-ML, ML	A-4, A-6	0-1	0-3	90-100	85-100	70-95	45-70	15-30	NP-15
Ko:												
Kokomo----------	0-14	Silty clay loam	CH, CL, MH, ML	A-6, A-7-6	0	0	90-100	85-100	75-100	55-95	35-55	10-30
	14-50	Silty clay loam, clay loam	CH, CL	A-7, A-7-6	0	0-1	90-100	85-100	75-100	55-95	40-60	20-35
	50-80	Loam, clay loam	CL, CL-ML, ML, SC	A-4, A-6	0-1	0-3	90-100	85-100	70-95	45-70	15-30	NP-15

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Lk:												
Lindside	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	80-100	55-90	20-35	2-15
	9-40	Silty clay loam, silt loam, very fine sandy loam	ML, CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	70-95	22-38	3-14
	40-80	Stratified fine sandy loam to silt loam, silty clay loam, gravelly sandy loam	SC, SM, ML, CL	A-2, A-4, A-6	0	0	60-100	55-100	45-100	30-95	22-38	3-14
LtC2:												
Loudonville	0-6	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	85-100	75-100	70-90	55-85	24-40	3-15
	6-30	Loam, gravelly clay loam, gravelly sandy loam, silty clay loam	ML, SM, CL	A-2, A-4, A-6, A-7	0-2	0-5	70-95	50-90	35-80	20-60	35-50	5-25
	30-35	Loam, gravelly clay loam, gravelly sandy loam, silty clay loam, clay loam	SM, ML, CL	A-6, A-7, A-2, A-4	0-2	0-5	70-95	50-90	35-80	20-60	35-50	5-25
	35-40	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
LtC2:												
Steinsburg------	0-7	Loam	CL, ML, SC-SM, SM, CL-ML	A-4	0	0-5	95-100	90-100	65-90	35-70	15-25	3-10
	7-16	Loam, gravelly sandy loam, fine sandy loam, sandy loam	SC-SM, SM	A-1, A-2, A-4	0	0-10	75-95	65-85	35-60	15-40	0-25	NP-5
	16-30	Gravelly sandy loam, very gravelly loamy sand, channery sandy loam	SC-SM, SM, GM	A-1, A-2, A-4	0	10-40	45-85	40-80	35-60	15-36	0-25	NP-3
	30-35	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
LtD2:												
Loudonville-----	0-4	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	85-100	75-100	70-90	55-85	24-40	3-15
	4-24	Loam, gravelly clay loam, clay loam	ML, CL, SM	A-2, A-4, A-6, A-7	0-2	0-5	70-95	50-90	35-80	20-60	35-50	5-25
	24-36	Gravelly sandy clay loam, sandy clay loam, sandy clay	CL, SC-SM, SC	A-2, A-4, A-6, A-7	0-2	0-5	70-95	50-90	40-80	25-50	20-50	5-24
	36-39	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Steinsburg------	0-7	Sandy loam	CL, ML, SM, SC-SM	A-4	0	0-5	95-100	90-100	65-90	35-70	18-30	3-10
	7-30	Channery sandy loam, fine sandy loam, gravelly sandy loam	SC-SM, SM, CL-ML	A-1, A-2, A-4	0	0-10	75-95	65-85	35-60	15-52	0-25	NP-5
	30-40	Channery loam, channery loamy sand	SM, SC-SM, GM	A-1, A-2, A-4	0	10-40	45-85	40-80	35-60	15-36	0-25	NP-3
	40-45	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
LtE:												
Loudonville-----	0-5	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	85-100	75-100	70-90	55-85	24-40	3-15
	5-18	Loam, gravelly clay loam, gravelly sandy loam, silt loam	SM, ML, CL	A-2, A-4, A-6, A-7	0-2	0-5	70-95	50-90	35-80	20-60	35-50	5-25
	18-37	Gravelly sandy clay loam, sandy clay loam, sandy clay, channery loam, channery sandy loam	SC, SC-SM, CL	A-2, A-4, A-6, A-7	0-2	0-5	70-95	50-90	40-80	25-50	20-50	5-24
	37-40	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Steinsburg------	0-3	Channery sandy loam	CL, ML, SC-SM, SM	A-4	0	0-15	80-95	65-85	35-60	35-55	15-25	3-10
	3-30	Gravelly sandy loam, very gravelly loamy sand, channery sandy loam, channery loamy coarse sand	SM, SC-SM, GM	A-1, A-2, A-4	0	10-40	45-85	40-80	35-60	15-36	0-25	NP-3
	30-33	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
LtF:												
Loudonville-----	0-5	Loam	CL-ML, ML, CL	A-4	0	0-1	95-100	80-100	70-95	55-90	20-35	2-10
	5-16	Loam, silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7	0	0-2	90-100	80-100	65-90	50-85	25-42	6-18
	16-38	Loam, silt loam, silty clay loam, clay loam	CL, CL-ML	A-4, A-6, A-7	0	0-2	90-100	80-100	65-90	50-85	25-42	6-18
	38-40	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
LtF:												
Steinsburg------	0-4	Sandy loam	CL, ML, SC-SM, SM	A-4	0	0-5	95-100	90-100	65-90	35-70	15-25	3-10
	4-17	Loam, gravelly sandy loam, fine sandy loam, sandy loam	SC-SM, SM, CL-ML	A-1, A-2, A-4	0	0-10	75-95	65-85	35-60	15-52	0-25	NP-5
	17-20	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Ma:												
Marengo---------	0-17	Clay loam, silty clay loam	CL	A-6, A-7	0	0	95-100	85-100	75-100	60-80	30-50	12-24
	17-68	Clay loam, silty clay loam, loam	CL	A-6, A-7	0	0-2	90-100	80-100	75-90	55-85	25-45	12-22
	68-80	Loam, clay loam	ML, CL, CL-ML	A-4, A-6	0	0-2	85-100	80-100	75-90	50-75	25-40	6-14
Mb:												
Marengo---------	0-18	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	85-100	80-100	65-90	25-40	4-14
	18-80	Clay loam, silty clay loam, loam	CL	A-6, A-7	0	0-2	90-100	80-100	75-90	55-85	25-45	12-22
McB:												
McGary----------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	7-30	Silty clay, silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	90-100	45-60	20-34
	30-80	Stratified silt loam to silty clay	CL, CH	A-6, A-7-6	0	0	100	100	95-100	90-100	38-60	15-34

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Me:												
Medway----------	0-15	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	100	100	85-100	70-90	20-40	3-15
	15-40	Loam, silt loam, clay loam	ML, CL-ML, CL	A-4, A-6, A-7	0	0	95-100	80-95	75-90	70-90	22-45	3-20
	40-80	Stratified gravelly sandy loam to silty clay loam, stratified sand to gravelly loam	ML, SC, SM, CL	A-1-b, A-2, A-4, A-6	0	0-5	80-100	50-100	30-95	15-75	15-30	NP-15
MkB2:												
Miamian---------	0-9	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	95-100	95-100	90-100	70-95	20-35	NP-12
	9-32	Clay loam, clay, silty clay, silty clay loam	CL, CH	A-6, A-7, A-7-6	0	0-5	85-100	80-100	75-95	70-85	35-52	15-30
	32-80	Loam, silt loam, clay loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	80-100	75-95	70-85	20-35	3-13
MkC2:												
Miamian---------	0-7	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	95-100	95-100	90-100	70-95	20-35	NP-12
	7-28	Silt loam, clay loam, silty clay loam	CL	A-6, A-7	0	0	85-100	80-100	75-95	70-85	30-50	10-25
	28-80	Clay loam, clay	CL, CH	A-6, A-7, A-7-6	0	0-5	85-100	80-100	75-95	70-85	35-52	15-30
MmC3:												
Miamian---------	0-5	Silty clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-95	70-90	30-45	15-25
	5-25	Clay loam, clay, silty clay loam	CL, CH	A-6, A-7, A-7-6	0	0-5	85-100	80-100	75-95	70-85	35-52	15-30
	25-80	Loam, silt loam, clay loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	80-100	75-95	70-85	20-35	3-13

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
MmC3:												
Thrifton--------	0-8	Clay loam	CL	A-6, A-7	0	0-5	85-100	80-100	75-95	70-85	35-50	15-30
	8-14	Clay loam	CL	A-6, A-7	0	0-5	85-100	80-100	75-95	70-85	35-50	15-30
	14-80	Gravelly loam, loam, silt loam	CL-ML, CL	A-4, A-6	0	0-5	75-95	75-90	65-85	50-75	20-35	3-13
MmD3:												
Miamian---------	0-3	Silty clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-95	70-90	30-45	15-25
	3-27	Clay loam, clay, silty clay loam	CL	A-6, A-7, A-7-6	0	0-5	85-100	80-100	75-95	70-85	35-50	15-30
	27-80	Loam, silt loam, clay loam	ML, CL-ML, CL	A-4, A-6	0	0-5	85-100	80-100	75-95	70-85	20-35	3-13
Thrifton--------	0-4	Clay loam	CL	A-6, A-7	0	0-5	85-100	80-100	75-95	70-85	35-50	15-30
	4-18	Clay loam	CL	A-6, A-7	0	0-5	85-100	80-100	75-95	70-85	35-50	15-30
	18-80	Gravelly loam, loam, silt loam	CL-ML	A-4, A-6	0	0-5	75-95	75-90	65-85	50-75	20-35	3-13
Mo:												
Montgomery------	0-10	Silty clay loam	CL	A-7-6	0	0	100	100	100	85-100	40-50	20-30
	10-57	Silty clay	CH	A-7-6	0	0	100	100	95-100	90-100	50-65	30-42
	57-80	Stratified silty clay loam to silty clay, gravelly clay loam	CL, CH	A-6, A-7-6	0	0	100	100	90-100	85-100	30-55	10-32
Mr:												
Muskego---------	0-5	Muck	PT	A-8	0	0	0	0	0	0	---	---
	5-27	Muck	PT	A-8	0	0	0	0	0	0	---	---
	27-80	Coprogenous earth	OL	A-5	0	0	95-100	95-100	85-100	75-96	40-50	2-8

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
NaD2:												
Negley----------	0-6	Loam	CL, CL-ML, ML	A-4, A-6	0	0	85-100	75-100	70-90	55-85	24-40	3-15
	6-70	Gravelly sandy clay loam, sandy clay loam, sandy clay, very gravelly sandy clay loam	CL, SC-SM, SC	A-2, A-4, A-6, A-7	0-2	0-5	70-95	50-90	40-80	25-50	20-50	5-24
	70-80	Stratified very gravelly sandy clay loam to sandy clay loam, gravelly sandy clay loam, sandy clay	SC, CL, SC-SM	A-2, A-4, A-6, A-7	0-2	0-5	70-95	50-90	40-80	25-50	20-50	5-24
NaE:												
Negley----------	0-5	Loam	CL-ML, ML, CL	A-4, A-6	0	0	85-100	75-100	70-90	55-85	24-40	3-15
	5-67	Loam, gravelly clay loam, gravelly sandy loam, gravelly loam, very gravelly sandy loam	ML, SM, CL	A-2, A-4, A-6, A-7	0-2	0-5	70-95	50-90	35-80	20-60	25-45	2-22
	67-92	Gravelly sandy clay loam, sandy clay loam, sandy clay, gravelly clay loam	SC, SC-SM, CL	A-2, A-4, A-6, A-7	0-2	0-5	70-95	50-90	40-80	25-50	20-50	5-24
	92-101	Stratified gravelly loamy sand to gravelly sandy loam, coarse sandy loam, gravelly clay loam	ML, CL, SM, SC	A-1-b, A-2, A-4, A-6	0-2	0-5	65-90	50-90	35-80	15-65	15-35	NP-15

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Ne:												
Newark----------	0-11	Silt loam	ML, CL, CL-ML	A-4	0	0	95-100	90-100	80-100	55-95	0-32	NP-10
	11-50	Silt loam, silty clay loam	ML, CL-ML, CL	A-4, A-6, A-7	0	0	95-100	90-100	85-100	70-95	22-42	3-20
	50-80	Stratified loam to silt loam, silty clay loam, silt loam	ML, CL-ML, CL	A-4, A-6, A-7	0	0-3	75-100	70-100	65-100	55-95	22-42	3-20
OcA:												
Ockley----------	0-10	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0	95-100	85-100	70-100	50-90	23-40	3-15
	10-16	Silt loam, clay loam, loam	CL-ML, CL, SC, SC-SM	A-2, A-4, A-6, A-7-6	0	0-1	90-100	85-100	70-100	30-95	20-50	5-35
	16-50	Gravelly sandy loam, gravelly clay loam, gravelly sandy clay loam, sandy loam	SM, SC, CL, ML	A-2, A-4, A-6, A-7-6	0	0-2	70-85	45-85	25-75	15-60	10-50	NP-35
	50-80	Stratified sand to very gravelly sand, very gravelly coarse sand, gravelly loamy coarse sand	SW, SP-SM, GW-GM, GP	A-1	0-2	1-10	30-70	20-55	10-30	2-10	0-0	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
OcB:												
Ockley----------	0-10	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	85-100	70-100	50-90	23-40	3-15
	10-35	Silt loam, clay loam, loam	SC-SM, CL, CL-ML, SC	A-2, A-4, A-6, A-7-6	0	0-1	90-100	85-100	70-100	30-95	20-50	5-35
	35-50	Sandy clay loam, gravelly sandy loam, clay loam, sandy loam	SM, SC, ML, CL	A-2, A-4, A-6, A-7-6	0	0-2	70-85	45-85	25-75	15-60	10-50	NP-35
	50-80	Stratified very gravelly sand, very gravelly coarse sand, gravelly loamy coarse sand	SW, SP-SM, GP, GW-GM	A-1	0-2	1-10	30-70	20-55	10-30	2-10	0-0	NP
Pa:												
Patton----------	0-15	Silty clay loam	CL	A-6	0	0	100	100	95-100	80-95	30-40	15-25
	15-48	Silty clay loam	CH, MH, ML, CL	A-7, A-6	0	0	100	100	95-100	80-100	40-55	15-25
	48-80	Stratified silt loam to silty clay loam, silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	75-95	25-40	10-20
Pb:												
Patton----------	0-18	Silty clay loam	CL	A-6	0	0	100	100	95-100	80-95	30-40	15-25
	18-56	Silty clay loam	CH, CL, MH, ML	A-7, A-7-6	0	0	100	100	95-100	80-100	40-55	15-25
	56-80	Stratified loam to silt loam to silty clay loam	CL	A-6	0	0	100	100	95-100	75-95	25-40	10-20

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Pe:												
Pewamo----------	0-18	Silty clay, silty clay loam	CL	A-6, A-7	0	0-5	90-100	75-100	75-100	70-90	35-50	15-25
	18-60	Clay loam, clay, silty clay, silty clay loam	CL, CH	A-7, A-7-6	0	0-5	95-100	75-100	75-100	75-95	40-55	20-35
	60-80	Clay loam, silty clay loam	CL	A-7, A-6	0	0-5	95-100	75-100	75-100	70-90	40-50	15-25
Ph.												
Pits												
PkB:												
Pike------------	0-13	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	22-40	NP-17
	13-45	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6, A-7-6	0	0	100	100	90-100	90-100	24-50	5-31
	45-80	Gravelly sandy clay loam, gravelly loam, gravelly clay loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	65-85	24-40	2-18
	80-120	Silt loam, clay loam, gravelly loam, gravelly clay loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	90-100	65-85	24-40	2-18
PkC2:												
Pike------------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	22-40	NP-17
	7-50	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7-6	0	0	100	100	90-100	90-100	24-50	5-31
	50-68	Silt loam, clay loam	CL-ML, ML, CL	A-4, A-6	0	0	100	100	90-100	65-85	24-40	2-18
	68-80	Silt loam, clay loam, gravelly loam, gravelly clay loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	90-100	65-85	24-40	2-18

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Ro:												
Rockmill--------	0-13	Silty clay loam	OL, SM, CL, ML	A-4, A-6	0	0	95-100	90-100	70-100	40-90	25-40	5-20
	13-18	Silt loam, mucky silt loam, silty clay loam	CL, CL-ML, SC-SM, SC	A-4	0	0	75-100	70-100	60-100	40-90	15-25	5-10
	18-80	Muck	PT	A-8	0	0	---	---	---	---	---	---
Rp:												
Rockmill--------	0-10	Silty clay loam	SM, CL, ML, OL	A-4, A-6	0	0	95-100	90-100	70-100	40-90	25-40	5-20
	10-22	Silt loam, mucky silt loam	SC, SC-SM, CL, CL-ML	A-4	0	0	75-100	70-100	60-100	40-90	15-25	5-10
	22-80	Muck	PT	A-8	0	0	---	---	---	---	---	---
Rt:												
Rossburg--------	0-22	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	95-100	90-100	80-100	60-90	20-35	3-14
	22-55	Silt loam, loam, fine sandy loam	ML, CL-ML, CL	A-4, A-6	0	0	90-100	85-100	70-95	50-80	20-35	3-14
	55-80	Stratified gravelly sandy loam to sandy loam to silt loam, gravelly loamy sand	SM, SC, ML, CL	A-2-4, A-4	0	0	80-100	70-100	45-90	25-70	0-25	NP-10
Sc:												
Sebring---------	0-9	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	100	100	95-100	85-95	20-35	3-11
	9-38	Silty clay loam, silt loam	ML, CL	A-4, A-6, A-7	0	0	100	95-100	90-100	80-100	30-50	7-22
	38-53	Stratified sandy loam to silty clay loam, silt loam	CL-ML, CL, ML, SC	A-2, A-4, A-6, A-7	0	0	90-100	85-100	55-100	30-95	20-45	3-20
	53-80	Stratified silt loam to silty clay loam, sandy loam	SC, CL-ML, ML, CL	A-2, A-4, A-6, A-7	0	0	90-100	85-100	55-100	30-95	20-45	3-20

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
SdD:												
Shelocta--------	0-3	Silt loam	ML, CL-ML	A-4	0-2	0-5	80-95	75-95	60-95	55-90	0-35	NP-10
	3-65	Silty clay loam, silt loam, channery silty clay loam, loam, channery loam, clay loam	CL-ML, CL, GC, SC	A-4, A-6	0-5	0-10	55-95	50-95	45-95	40-90	25-40	4-15
	65-70	Channery silt loam, channery silty clay loam, very channery clay loam, clay loam	CL, GC, GM, ML	A-1-b, A-2, A-4, A-6	0-10	0-15	40-85	35-70	25-70	20-65	20-40	3-20
	70-80	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
SeE:												
Shelocta--------	0-8	Silt loam	CL-ML, ML	A-4	0	0-5	80-95	75-95	60-95	55-90	0-35	NP-10
	8-56	Silty clay loam, silt loam, channery silty clay loam, channery silt loam	CL, GC, CL-ML, SC	A-4, A-6	0-5	0-10	55-95	50-95	45-95	40-90	25-40	4-15
	56-80	Very channery silt loam	GM, GC, CL, ML	A-1-b, A-2, A-4, A-6	0-10	0-15	40-85	35-70	25-70	20-65	20-40	3-20
Berks-----------	0-2	Channery silt loam	ML, CL-ML, CL	A-4	0-2	0-5	80-100	75-100	65-85	50-75	25-36	5-10
	2-24	Channery loam, very channery loam, channery silt loam, very channery silt loam, extremely channery silt loam, silt loam	CL, SM, SC, GC, GM	A-1, A-2, A-4	0	0-30	40-80	35-70	25-60	20-51	25-36	5-10
	24-27	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	27-28	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
SfD:												
Shelocta--------	0-7	Loam	ML, CL-ML	A-4	0-2	0-5	80-95	75-95	60-95	55-90	0-35	NP-10
	7-64	Silty clay loam, silt loam, channery silty clay loam, clay loam, loam	CL, CL-ML, GC, SC	A-4, A-6	0-5	0-10	55-95	50-95	45-95	40-90	25-40	4-15
	64-95	Channery silt loam, channery silty clay loam, very channery clay loam, clay loam	ML, GM, CL, GC	A-1-b, A-2, A-4, A-6	0-10	0-15	40-85	35-70	25-70	20-65	20-40	3-20
	95-100	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cruze-----------	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-100	70-95	60-80	22-38	3-14
	9-13	Silt loam, silty clay loam, channery silty clay loam	CL, GC, SC	A-7, A-6	0	0-10	70-100	55-100	55-95	45-85	30-50	10-25
	13-45	Silty clay, silty clay loam, channery silty clay loam, clay loam	CH, CL	A-7, A-7-6	0	0-20	70-100	55-100	55-95	50-90	40-65	15-35
	45-53	Silty clay, channery silty clay	CH, CL	A-7, A-7-6	0	0-20	70-100	55-100	55-95	50-90	40-70	15-40
	53-63	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
SfE:												
Shelocta--------	0-7	Loam	ML, CL-ML	A-4	0-2	0-5	80-95	75-95	60-95	55-90	0-35	NP-10
	7-64	Silty clay loam, silt loam, channery silty clay loam, clay loam, loam	CL, CL-ML, GC, SC	A-4, A-6	0-5	0-10	55-95	50-95	45-95	40-90	25-40	4-15
	64-95	Channery silt loam, channery silty clay loam, very channery clay loam, clay loam	CL, GC, ML, GM	A-1-b, A-2, A-4, A-6	0-10	0-15	40-85	35-70	25-70	20-65	20-40	3-20
	95-100	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cruze-----------	0-9	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0-5	85-100	75-100	70-95	60-80	22-38	3-14
	9-17	Silt loam, silty clay loam, channery silty clay loam	GC, SC, CL	A-6, A-7	0	0-10	70-100	55-100	55-95	45-85	30-50	10-25
	17-45	Silty clay, silty clay loam, channery silty clay loam	CL, CH	A-7, A-7-6	0	0-20	70-100	55-100	55-95	50-90	40-65	15-35
	45-53	Silty clay, channery silty clay	CL, CH	A-7, A-7-6	0	0-20	70-100	55-100	55-95	50-90	40-70	15-40
	53-80	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Sh:												
Shoals----------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	50-100	20-40	3-20
	8-48	Silt loam, loam, clay loam, silty clay loam	CL, ML, CL-ML	A-4, A-6, A-7-6	0	0	100	95-100	75-100	50-100	20-50	3-30
	48-80	Stratified sand to silt loam, gravelly clay loam, gravelly sandy loam	ML, SM, SP-SM, CL, CL-ML	A-2-4, A-2-6, A-4, A-6	0	0-3	90-100	75-100	50-100	5-100	0-40	NP-15
SkA:												
Sleeth----------	0-8	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	100	85-100	75-100	50-90	20-40	3-20
	8-25	Clay loam, silty clay loam, sandy clay loam, loam	ML, SC-SM, SC, CL	A-2, A-4, A-6, A-7-6	0	0	90-100	85-100	45-100	20-90	20-60	3-35
	25-54	Gravelly clay loam, gravelly sandy clay loam, gravelly sandy loam	CL, SM, SC-SM, SC	A-2-4, A-4, A-6	0	0-3	60-90	50-75	30-60	15-50	10-60	NP-30
	54-80	Stratified very gravelly sand to gravelly sand to sand to gravelly loamy sand	SP-SM, SP, GP-GM, GP	A-1-a, A-1-b	0-1	0-5	45-65	30-65	10-50	0-10	0-0	NP
St:												
Stonelick-------	0-12	Sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	85-100	75-100	45-75	25-55	0-24	NP-6
	12-80	Stratified gravelly loamy sand to very gravelly loamy sand to loamy sand to loam	SM, SP-SM	A-1-b, A-2, A-3, A-4	0	0	30-70	20-55	10-55	5-36	0-0	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
TaC2:												
Tarlton---------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	85-100	65-90	25-40	4-15
	6-21	Silty clay loam, clay loam	CL	A-6, A-7	0	0	95-100	95-100	70-100	55-95	30-45	15-25
	21-34	Silty clay, clay, channery silty clay	CH, CL	A-7, A-7-6	0	0-10	90-95	60-95	55-90	50-85	40-55	25-35
	34-39	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	39-42	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
ThA:												
Thackery--------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	90-100	85-100	70-90	22-36	3-14
	8-40	Silt loam, loam, silty clay loam, clay loam	CL, CL-ML, ML	A-4, A-6	0	0	100	90-100	80-95	65-90	25-40	6-14
	40-64	Clay loam, sandy clay loam, gravelly clay loam, loam	CL	A-4, A-6	0	0-2	80-100	75-95	70-85	60-75	25-40	8-18
	64-80	Fine sandy loam, extremely gravelly loamy sand, stratified coarse sand to gravelly sand to loamy coarse sand, loam	GM, GP, GW, GP-GM, SM	A-1, A-4	0	0-5	30-70	20-55	10-38	2-36	0-0	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
ThB:												
Thackery--------	0-12	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	90-100	85-100	70-90	22-36	3-14
	12-17	Silt loam, loam, silty clay loam	ML, CL-ML, CL	A-4, A-6	0	0	100	90-100	80-95	65-90	25-40	6-14
	17-30	Clay loam, sandy clay loam, gravelly clay loam	CL	A-4, A-6	0	0-2	80-100	75-95	70-85	60-75	25-40	8-18
	30-54	Stratified gravelly sand to extremely gravelly loamy sand, gravelly loam, stratified sandy loam	SM, GW, GM, GP-GM, GP	A-1, A-4	0	0-5	30-70	20-55	10-38	2-36	0-0	NP
	54-80	Stratified gravelly sand to extremely gravelly loamy sand, gravelly loam, sandy loam, gravelly loamy sand	GP, GW, GM, GP-GM, SM	A-1, A-4	0	0-5	30-70	20-55	10-38	2-36	0-0	NP
Ud, Uf, Ug. Udorthents												
Um: Urban land.												
Aetna-----------	0-20	Silt loam	CL, ML	A-4	0	0	100	90-100	80-95	70-85	20-35	2-18
	20-80	Silty clay loam, silt loam, clay loam	ML, CL	A-4, A-6, A-7	0	0	100	90-100	80-95	70-85	30-45	7-19

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
UoC:												
Urban land.												
Amanda----------	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	75-100	55-90	20-35	3-10
	7-20	Clay loam, loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	85-100	80-100	60-95	25-40	5-18
	20-40	Clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-75	25-40	3-18
	40-80	Loam, silt loam	CL, CL-ML, ML	A-4	0	0-5	85-100	75-95	65-95	50-85	20-35	3-10
UrB:												
Urban land.												
Bennington------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0-2	95-100	90-100	85-100	65-90	22-38	3-14
	8-36	Silty clay loam, clay loam, clay	CH, CL	A-6, A-7	0	0-2	85-100	80-100	75-100	70-95	30-52	12-30
	36-80	Clay loam, silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0-1	0-2	80-100	75-100	70-100	60-90	25-40	6-18
UtC:												
Urban land.												
Cardington------	0-10	Silt loam	CL, ML	A-6, A-7	0	0-2	95-100	90-100	90-100	80-95	35-45	10-20
	10-30	Silty clay loam, clay loam, silty clay	CH, CL	A-6, A-7, A-7-6	0	0-2	80-100	75-100	70-100	65-90	30-52	12-30
	30-80	Clay loam, silty clay loam, loam	ML, CL, CL-ML	A-4, A-6	0	0-5	80-100	75-100	70-95	65-85	22-40	3-18

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
UuB:												
Urban land.												
Celina----------	0-8	Silt loam	CL, ML	A-4	0	0	100	90-100	90-100	70-85	20-35	2-18
	8-28	Clay, clay loam, silty clay loam	CH, CL	A-6, A-7, A-7-6	0	0	100	90-100	80-95	70-85	32-52	12-28
	28-80	Loam, silt loam, clay loam	CL, CL-ML	A-4, A-6	0	0	75-95	75-90	65-90	50-80	20-36	4-16
UxB:												
Urban land.												
Ockley----------	0-11	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	95-100	85-100	70-100	50-90	23-40	3-15
	11-23	Silt loam, clay loam	SC, CL-ML, CL, SC-SM	A-2, A-4, A-6, A-7-6	0	0-1	90-100	85-100	70-100	30-95	20-50	5-35
	23-44	Sandy clay loam, gravelly sandy loam	SC, SM, ML, CL	A-2, A-4, A-6, A-7-6	0	0-2	70-85	45-85	25-75	15-60	10-50	NP-35
	44-80	Stratified sand to gravel, very gravelly coarse sand, gravelly loamy coarse sand	GP, GW-GM, SP-SM, SW	A-1	0-2	1-10	30-70	20-55	10-30	2-10	0-0	NP
Uy:												
Urban land.												
Udorthents.												

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
WdA:												
Wea-------------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	75-100	50-100	20-40	3-20
	8-38	Silty clay loam, clay loam, loam, sandy clay loam	CL, CL-ML, ML	A-4, A-6, A-7-6	0	0	90-100	85-100	75-100	50-90	20-60	3-35
	38-55	Gravelly loam, gravelly sandy loam, gravelly sandy clay loam, gravelly clay loam, sandy clay loam	SC, SC-SM, CL-ML, CL	A-2, A-2-4, A-4, A-6	0	0-5	60-90	50-75	30-75	15-60	15-40	NP-20
	55-80	Stratified very gravelly coarse sand to gravelly loamy sand, very gravelly sand	GW, SP-SM, SW-SM, SW	A-1-a, A-1-b	0-1	1-5	45-80	30-70	10-40	0-10	0-0	NP
WeC:												
Wellston--------	0-7	Silt loam	CL, ML	A-4	0	0	95-100	90-100	85-100	70-95	20-35	2-18
	7-48	Silt loam, silty clay loam, loam	CL, CL-ML	A-4, A-6	0	0-5	75-100	70-100	60-95	60-90	25-40	5-20
	48-72	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
WfC:												
Wellston--------	0-8	Silt loam	ML, CL	A-4	0	0	95-100	90-100	85-100	70-95	20-35	2-18
	8-39	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0-5	75-100	70-100	60-95	60-90	25-40	5-20
	39-55	Very channery loam, gravelly sandy loam, channery clay loam, channery loam	CL, GC-GM, SC, SC-SM	A-1-b, A-2, A-4, A-6	0	0-15	60-80	45-75	30-70	15-55	20-35	5-15
	55-58	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
WfC:												
Cruze-----------	0-6	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0-5	85-100	75-100	70-95	60-80	22-38	3-14
	6-15	Silt loam, silty clay loam, channery silty clay loam	CL, GC, SC	A-6, A-7	0	0-10	70-100	55-100	55-95	45-85	30-50	10-25
	15-37	Silty clay, silty clay loam, channery silty clay loam	CH, CL	A-7, A-7-6	0	0-20	70-100	55-100	55-95	50-90	40-65	15-35
	37-45	Silty clay, channery silty clay, channery silty clay loam, silty clay loam	CH, CL	A-7, A-7-6	0	0-20	70-100	55-100	55-95	50-90	40-70	15-40
	45-50	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Wg:												
Westland--------	0-10	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	90-100	90-100	75-100	55-90	23-40	3-20
	10-54	Clay loam, sandy loam, very gravelly sandy loam, silty clay loam, gravelly clay loam	SC-SM, SC, CL-ML, CL	A-4, A-6, A-7-6	0	0-5	55-100	45-95	25-85	15-70	20-55	5-35
	54-80	Loam, sandy loam, very gravelly sandy loam	SC, CL, ML, SM, CL-ML	A-2-4, A-4, A-6	0	0-5	55-100	45-95	25-85	15-70	10-35	NP-15
	80-86	Stratified gravelly loamy coarse sand, gravelly coarse sand, very gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1, A-1-b	0	0-12	40-75	35-70	10-45	0-10	0-0	NP

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Wk:												
Westland--------	0-12	Silty clay loam	ML, MH, CL, CH	A-6, A-7-6	0	0	90-100	90-100	85-100	75-95	35-55	10-30
	12-34	Clay loam, sandy loam, very gravelly sandy loam, silty clay loam	CL-ML, CL, SC-SM, SC	A-4, A-6, A-7-6	0	0-5	55-100	45-95	25-85	15-70	20-55	5-35
	34-60	Gravelly sandy loam, gravelly loam	SM, CL-ML, SC, ML, CL	A-2-4, A-4, A-6	0	0-5	55-100	45-95	25-85	15-70	10-35	NP-15
	60-80	Stratified gravelly loamy coarse sand to loamy coarse sand, gravelly coarse sand, gravelly sand	GP, GP-GM, SP, SP-SM	A-1, A-1-b	0	0-12	40-75	35-70	10-45	0-10	0-0	NP
ZnB:												
Zanesville------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	90-100	80-100	22-38	3-14
	7-34	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	90-100	80-100	25-40	5-20
	34-55	Silt loam, silty clay loam	ML, CL-ML, CL	A-4, A-6	0	0-3	90-100	85-100	80-100	60-100	20-40	2-20
	55-75	Sandy clay loam, clay loam, channery sandy clay loam, silty clay loam	SM, SC, GM, CL	A-1-b, A-2, A-4, A-6	0	0-10	65-100	50-100	40-100	20-85	20-40	2-20
	75-78	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 22.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
ZnC2:												
Zanesville------	0-6	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	95-100	95-100	90-100	80-100	22-38	3-14
	6-24	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	90-100	80-100	25-40	5-20
	24-48	Silt loam, silty clay loam	CL, ML, CL-ML	A-4, A-6	0	0-3	90-100	85-100	80-100	60-100	20-40	2-20
	48-52	Sandy clay loam, clay loam, channery sandy clay loam, channery loam	CL, GM, SC, SM	A-1-b, A-2, A-4, A-6	0	0-10	65-100	50-100	40-100	20-85	20-40	2-20
	52-55	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 23.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
AfB:										
Alford----------	0-13	12-26	1.30-1.60	0.60-2.00	0.18-0.24	Low	.43	.43	5	5
	13-46	22-32	1.40-1.60	0.60-2.00	0.14-0.21	Moderate	.49	.49		
	46-76	12-22	1.30-1.45	0.60-2.00	0.18-0.22	Low	.55	.55		
	76-80	12-22	1.30-1.45	0.60-2.00	0.18-0.22	Low	.55	.55		
AfC2:										
Alford----------	0-8	12-26	1.30-1.60	0.60-2.00	0.18-0.24	Low	.43	.43	5	5
	8-74	22-32	1.40-1.60	0.60-2.00	0.14-0.21	Moderate	.49	.49		
	74-80	12-22	1.30-1.45	0.60-2.00	0.18-0.22	Low	.55	.55		
Ag:										
Aetna-----------	0-7	15-27	1.20-1.45	0.60-2.00	0.16-0.20	Low	.37	.37	5	6
	7-23	20-35	1.25-1.65	0.60-2.00	0.16-0.20	Low	.37	.37		
	23-63	20-35	1.25-1.65	0.60-2.00	0.16-0.20	Low	.37	.37		
	63-80	20-35	1.25-1.65	0.60-2.00	0.16-0.20	Low	.37	.37		
Ah:										
Aetna-----------	0-7	15-27	1.20-1.45	0.60-2.00	0.16-0.20	Low	.37	.37	5	6
	7-23	20-35	1.25-1.65	0.60-2.00	0.16-0.20	Low	.37	.37		
	23-63	20-40	1.25-1.65	0.60-2.00	0.16-0.20	Low	.37	.37		
	63-80	20-35	1.25-1.65	0.60-2.00	0.16-0.20	Low	.37	.37		
AmB:										
Amanda----------	0-9	12-27	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	6
	9-24	23-35	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	.37	.43		
	24-43	23-35	1.45-1.70	0.20-0.60	0.13-0.19	Moderate	.37	.49		
	43-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
AmB2:										
Amanda----------	0-7	12-27	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	6
	7-20	23-35	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	.37	.43		
	20-62	23-35	1.45-1.70	0.20-0.60	0.13-0.19	Moderate	.37	.49		
	62-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
AmC2:										
Amanda----------	0-8	12-27	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	6
	8-34	23-35	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	.37	.43		
	34-55	23-35	1.45-1.70	0.20-0.60	0.13-0.19	Moderate	.37	.49		
	55-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
AmD2:										
Amanda----------	0-4	12-27	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	6
	4-20	23-35	1.45-1.70	0.60-2.00	0.13-0.19	Moderate	.37	.49		
	20-28	20-40	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
	28-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
AmE2:										
Amanda----------	0-7	12-27	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	6
	7-30	23-35	1.45-1.70	0.60-2.00	0.13-0.19	Moderate	.37	.49		
	30-33	23-35	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
	33-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
AoC3:										
Amanda----------	0-6	27-32	1.35-1.55	0.60-2.00	0.17-0.22	Moderate	.37	.43	5	7
	6-24	23-35	1.45-1.70	0.60-2.00	0.13-0.19	Moderate	.37	.49		
	24-30	20-40	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
	30-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
AoD3:										
Amanda----------	0-5	27-32	1.35-1.55	0.60-2.00	0.17-0.22	Moderate	.37	.43	5	7
	5-30	23-35	1.45-1.70	0.60-2.00	0.13-0.19	Moderate	.37	.49		
	30-36	20-40	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
	36-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
ApB2:										
Amanda----------	0-6	12-27	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	6
	6-52	23-35	1.45-1.70	0.60-2.00	0.13-0.19	Moderate	.37	.49		
	52-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
Loudonville-----	0-5	13-22	1.30-1.50	0.60-2.00	0.16-0.20	Low	.32	.37	2	5
	5-25	20-34	1.35-1.60	0.60-2.00	0.14-0.18	Moderate	.32	.37		
	25-39	10-30	1.30-1.50	0.60-2.00	0.08-0.14	Low	.32	.64		
	39-49	---	---	0.00-0.20	---	---	---	---		
ApC2:										
Amanda----------	0-10	12-27	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	6
	10-39	20-40	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	.37	.43		
	39-70	15-40	1.45-1.70	0.20-0.60	0.13-0.19	Moderate	.37	.49		
	70-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
Loudonville-----	0-6	13-22	1.30-1.50	0.60-2.00	0.16-0.20	Low	.32	.37	2	5
	6-35	20-34	1.35-1.60	0.60-2.00	0.14-0.18	Moderate	.32	.37		
	35-48	---	---	0.00-0.20	---	---	---	---		
ApD2:										
Amanda----------	0-10	12-27	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	6
	10-30	20-40	1.45-1.70	0.60-2.00	0.13-0.19	Moderate	.37	.49		
	30-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
Loudonville-----	0-4	27-40	1.30-1.50	0.60-2.00	0.16-0.20	Low	.32	.37	2	5
	4-20	20-34	1.35-1.60	0.60-2.00	0.14-0.18	Moderate	.32	.37		
	20-36	10-35	1.30-1.50	0.60-2.00	0.08-0.14	Low	.32	.64		
	36-39	---	---	0.00-0.20	---	---	---	---		
ArC2:										
Amanda----------	0-8	12-27	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	6
	8-44	15-35	1.45-1.70	0.60-2.00	0.13-0.19	Moderate	.37	.49		
	44-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
Ockley----------	0-5	11-22	1.30-1.60	0.60-2.00	0.16-0.24	Low	.37	.37	4	5
	5-22	22-34	1.40-1.60	0.60-2.00	0.13-0.20	Moderate	.32	.37		
	22-47	10-35	1.40-1.70	0.60-6.00	0.05-0.20	Moderate	.10	.20		
	47-80	2-6	1.60-1.80	20.00-99.90	0.02-0.04	Low	.02	.10		
ArD2:										
Amanda----------	0-6	12-27	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	6
	6-36	23-35	1.45-1.70	0.60-2.00	0.13-0.19	Moderate	.37	.49		
	36-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
Ockley----------	0-6	11-22	1.30-1.60	0.60-2.00	0.16-0.24	Low	.37	.37	4	5
	6-24	22-34	1.40-1.60	0.60-2.00	0.13-0.20	Moderate	.32	.37		
	24-35	10-32	1.40-1.70	0.60-6.00	0.05-0.20	Moderate	.10	.20		
	35-80	2-10	1.60-1.80	20.00-99.90	0.02-0.04	Low	.02	.10		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
Bb:										
Beaucoup--------	0-20	27-35	1.15-1.35	0.20-0.60	0.15-0.20	Moderate	.32	.32	5	7
	20-54	15-35	1.30-1.50	0.20-0.60	0.18-0.20	Moderate	.32	.32		
	54-80	18-38	1.35-1.55	0.20-0.60	0.18-0.22	Moderate	.32	.32		
BeA:										
Bennington------	0-9	15-25	1.30-1.50	0.60-2.00	0.17-0.21	Low	.43	.43	5	6
	9-46	35-43	1.40-1.70	0.06-0.60	0.10-0.17	Moderate	.32	.37		
	46-80	24-33	1.65-1.80	0.06-0.20	0.07-0.12	Low	.32	.37		
BeB:										
Bennington------	0-9	15-25	1.30-1.50	0.60-2.00	0.17-0.21	Low	.43	.43	5	6
	9-30	35-42	1.40-1.70	0.06-0.60	0.10-0.17	Moderate	.32	.37		
	30-80	24-34	1.65-1.80	0.06-0.20	0.07-0.12	Low	.32	.37		
BkF:										
Berks-----------	0-4	5-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	4-25	5-20	1.20-1.60	2.00-6.00	0.04-0.10	Low	.17	.24		
	25-28	---	---	0.00-0.20	---	---	---	---		
	28-30	---	---	0.00-0.20	---	---	---	---		
CaB:										
Cardington------	0-8	12-27	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.37	5	6
	8-33	35-43	1.45-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.43		
	33-80	24-33	1.65-1.82	0.20-0.60	0.07-0.12	Low	.37	.43		
CaB2:										
Cardington------	0-6	12-27	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.37	5	6
	6-30	35-43	1.45-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.43		
	30-80	15-33	1.65-1.82	0.20-0.60	0.07-0.12	Low	.37	.43		
CaC2:										
Cardington------	0-8	12-27	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.37	5	6
	8-28	35-43	1.45-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.43		
	28-80	24-33	1.65-1.82	0.20-0.60	0.07-0.12	Low	.37	.43		
CaD2:										
Cardington------	0-9	12-27	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.37	5	6
	9-30	35-43	1.45-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.43		
	30-80	24-33	1.65-1.82	0.20-0.60	0.07-0.12	Low	.37	.43		
Cb:										
Carlisle--------	0-12	0-0	0.13-0.23	0.20-6.00	0.35-0.45	---	---	---	3	2
	12-30	0-0	0.13-0.23	0.20-6.00	0.35-0.45	---	---	---		
	30-80	0-0	0.13-0.23	0.20-6.00	0.35-0.45	---	---	---		
CdF:										
Cedarfalls------	0-5	5-15	1.20-1.40	6.00-20.00	0.10-0.15	Low	.24	.24	3	3
	5-20	3-15	1.40-1.60	6.00-20.00	0.07-0.10	Low	.15	.17		
	20-57	0-7	1.40-1.60	6.00-20.00	0.03-0.08	Low	.15	.28		
	57-60	---	---	0.00-0.20	---	---	---	---		
Rock outcrop.										
CeB:										
Celina----------	0-9	14-26	1.30-1.50	0.60-2.00	0.20-0.24	Low	.37	.37	4	6
	9-36	30-48	1.45-1.60	0.20-0.60	0.16-0.19	Moderate	.37	.37		
	36-80	16-27	1.60-1.82	0.20-0.60	0.06-0.10	Low	.37	.49		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
CfB:										
Centerburg------	0-8	10-22	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	5
	8-19	15-35	1.40-1.70	0.60-2.00	0.15-0.22	Moderate	.37	.43		
	19-46	25-35	1.45-1.70	0.20-0.60	0.15-0.19	Moderate	.37	.49		
	46-80	15-25	1.55-1.85	0.20-0.60	0.09-0.13	Low	.37	.49		
CfB2:										
Centerburg------	0-6	10-22	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	5
	6-32	20-35	1.40-1.70	0.60-2.00	0.15-0.22	Moderate	.37	.43		
	32-80	15-25	1.55-1.85	0.20-0.60	0.09-0.13	Low	.37	.49		
CfC2:										
Centerburg------	0-8	10-22	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	5
	8-16	20-35	1.45-1.70	0.20-0.60	0.15-0.19	Moderate	.37	.49		
	16-44	25-40	1.55-1.85	0.20-0.60	0.09-0.13	Low	.37	.49		
	44-80	15-25	1.55-1.85	0.20-0.60	0.09-0.13	Low	.37	.49		
Cg:										
Chagrin---------	0-8	10-27	1.20-1.40	0.60-2.00	0.20-0.24	Low	.32	.32	5	5
	8-36	18-30	1.20-1.50	0.60-2.00	0.14-0.20	Low	.32	.37		
	36-80	5-25	1.20-1.40	0.60-2.00	0.08-0.20	Low	.32	.43		
CkC2:										
Cincinnati------	0-9	18-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	.55	.55	4	6
	9-30	15-35	1.45-1.65	0.60-2.00	0.15-0.19	Low	.55	.55		
	30-46	25-35	1.60-1.85	0.06-0.60	0.06-0.12	Moderate	.49	.49		
	46-94	25-40	1.55-1.75	0.06-0.60	0.06-0.12	Moderate	.32	.37		
CmC2:										
Cincinnati------	0-8	18-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	.55	.55	4	6
	8-22	22-35	1.45-1.65	0.60-2.00	0.15-0.19	Low	.55	.55		
	22-50	25-35	1.60-1.85	0.06-0.60	0.06-0.12	Moderate	.49	.49		
	50-80	15-40	1.55-1.75	0.06-0.60	0.06-0.12	Moderate	.32	.37		
Wellston--------	0-7	13-27	1.30-1.50	0.60-2.00	0.18-0.22	Low	.37	.37	3	6
	7-42	18-35	1.30-1.65	0.60-2.00	0.17-0.21	Low	.37	.43		
	42-48	15-30	1.30-1.60	0.60-2.00	0.12-0.17	Low	.37	.55		
	48-72	---	---	0.00-0.20	---	---	---	---		
Cn:										
Condit----------	0-9	18-27	1.30-1.50	0.60-2.00	0.19-0.23	Low	.37	.37	3	6
	9-30	30-45	1.45-1.70	0.06-0.20	0.08-0.16	Moderate	.28	.28		
	30-44	23-36	1.65-1.80	0.01-0.20	0.07-0.12	Moderate	.28	.28		
	44-80	23-36	1.65-1.80	0.01-0.20	0.07-0.12	Moderate	.28	.28		
CoB:										
Corwin----------	0-15	15-26	1.30-1.60	0.60-2.00	0.18-0.24	Low	.28	.28	5	5
	15-38	25-35	1.50-1.70	0.60-2.00	0.11-0.16	Moderate	.28	.32		
	38-80	10-25	1.70-1.90	0.06-0.20	0.04-0.12	Low	.37	.43		
CrA:										
Crosby----------	0-8	10-24	1.30-1.60	0.60-2.00	0.18-0.24	Low	.43	.43	4	5
	8-38	30-45	1.45-1.65	0.60-2.00	0.11-0.16	Moderate	.28	.32		
	38-80	12-27	1.60-1.82	0.06-0.20	0.04-0.12	Low	.28	.37		
CsA:										
Canal-----------	0-9	16-27	1.30-1.40	0.60-2.00	0.17-0.22	Low	.37	.37	5	6
	9-14	15-40	1.40-1.70	0.20-0.60	0.15-0.19	Moderate	.37	.37		
	14-45	16-35	1.40-1.60	0.20-0.60	0.14-0.18	Low	.37	.37		
	45-80	40-60	1.40-1.50	0.06-0.20	0.08-0.12	High	.37	.37		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
Ee:										
Eel-------------	0-8	18-27	1.30-1.60	0.60-2.00	0.20-0.24	Low	.32	.32	5	6
	8-30	5-25	1.40-1.60	0.60-2.00	0.17-0.22	Low	.43	.43		
	30-55	15-25	1.40-1.60	0.60-2.00	0.14-0.22	Low	.37	.43		
	55-80	15-20	1.40-1.60	0.60-2.00	0.08-0.12	Low	.37	.43		
EkA:										
Eldean----------	0-8	15-25	1.30-1.50	0.60-2.00	0.18-0.22	Low	.37	.43	4	5
	8-34	35-49	1.40-1.60	0.20-2.00	0.08-0.14	Moderate	.37	.49		
	34-80	2-8	1.55-1.70	6.00-20.00	0.01-0.04	Low	.10	.43		
EkB:										
Eldean----------	0-7	15-25	1.30-1.50	0.60-2.00	0.18-0.22	Low	.37	.43	4	5
	7-35	20-48	1.40-1.60	0.20-2.00	0.08-0.14	Moderate	.37	.49		
	35-80	2-8	1.55-1.70	6.00-20.00	0.01-0.04	Low	.10	.43		
EnC2:										
Eldean----------	0-8	15-27	1.30-1.50	0.60-2.00	0.15-0.18	Low	.28	.49	4	8
	8-34	35-48	1.40-1.60	0.20-2.00	0.08-0.14	Moderate	.37	.49		
	34-80	2-8	1.55-1.70	6.00-20.00	0.01-0.04	Low	.10	.43		
Eu:										
Euclid----------	0-15	12-27	1.25-1.50	0.60-2.00	0.18-0.22	Low	.37	.37	5	5
	15-50	18-35	1.45-1.65	0.20-0.60	0.15-0.19	Low	.37	.37		
	50-80	15-32	1.45-1.60	0.20-0.60	0.14-0.18	Low	.37	.37		
FbA:										
Fitchville------	0-10	16-27	1.30-1.45	0.60-2.00	0.17-0.21	Low	.37	.37	5	6
	10-63	20-35	1.45-1.70	0.20-0.60	0.15-0.19	Moderate	.37	.37		
	63-80	16-35	1.40-1.65	0.20-2.00	0.14-0.18	Low	.37	.37		
FhA:										
Fox-------------	0-10	10-17	1.35-1.55	0.60-2.00	0.17-0.24	Low	.37	.37	4	5
	10-35	25-42	1.55-1.65	0.60-2.00	0.10-0.19	Moderate	.32	.32		
	35-80	0-2	1.30-1.70	6.00-60.00	0.02-0.07	Low	.10	.10		
FhB:										
Fox-------------	0-10	10-17	1.35-1.55	0.60-2.00	0.17-0.24	Low	.37	.37	4	5
	10-33	28-42	1.55-1.65	0.60-2.00	0.10-0.19	Moderate	.32	.32		
	33-80	0-2	1.30-1.70	6.00-60.00	0.02-0.07	Low	.10	.10		
FhC2:										
Fox-------------	0-8	10-17	1.35-1.55	0.60-2.00	0.17-0.24	Low	.37	.37	4	5
	8-30	20-42	1.55-1.65	0.60-2.00	0.10-0.19	Moderate	.32	.32		
	30-80	0-2	1.30-1.70	6.00-60.00	0.02-0.07	Low	.10	.10		
FhD2:										
Fox-------------	0-5	10-17	1.35-1.55	0.60-2.00	0.17-0.24	Low	.37	.37	4	5
	5-9	18-35	1.55-1.65	0.60-2.00	0.10-0.22	Moderate	.43	.43		
	9-33	18-35	1.55-1.65	0.60-2.00	0.10-0.19	Moderate	.32	.32		
	33-80	0-2	1.30-1.70	6.00-60.00	0.02-0.07	Low	.10	.10		
FmA:										
Fox-------------	0-9	10-17	1.35-1.55	0.60-2.00	0.17-0.24	Low	.37	.37	4	5
	9-20	18-35	1.55-1.65	0.60-2.00	0.10-0.22	Moderate	.43	.43		
	20-34	5-35	1.55-1.65	0.60-2.00	0.10-0.19	Moderate	.32	.32		
	34-80	0-2	1.30-1.70	6.00-60.00	0.02-0.07	Low	.10	.10		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
FmB:										
Fox-------------	0-10	10-17	1.35-1.55	0.60-2.00	0.17-0.24	Low	.37	.37	4	5
	10-26	18-35	1.55-1.65	0.60-2.00	0.10-0.22	Moderate	.43	.43		
	26-37	18-40	1.55-1.65	0.60-2.00	0.10-0.19	Moderate	.32	.32		
	37-80	0-2	1.30-1.70	6.00-60.00	0.02-0.07	Low	.10	.10		
GaB:										
Gallman---------	0-13	10-25	1.30-1.50	0.60-2.00	0.14-0.15	Low	.32	.43	5	5
	13-44	18-33	1.45-1.65	2.00-6.00	0.10-0.16	Low	.20	.28		
	44-71	15-27	1.30-1.50	2.00-6.00	0.08-0.14	Low	.32	.55		
	71-80	15-27	1.30-1.50	2.00-20.00	0.06-0.10	Low	.32	.55		
GcD:										
Germano---------	0-3	8-18	1.25-1.45	0.60-2.00	0.16-0.22	Low	.24	.28	3	3
	3-6	8-18	1.25-1.45	0.60-2.00	0.16-0.22	Low	.32	.37		
	6-28	8-18	1.30-1.60	2.00-6.00	0.07-0.15	Low	.17	.32		
	28-42	---	---	0.20-2.00	---	---	---	---		
	42-44	---	---	0.00-0.20	---	---	---	---		
GcE:										
Germano---------	0-6	8-18	1.25-1.45	0.60-2.00	0.16-0.22	Low	.24	.28	3	3
	6-20	8-18	1.30-1.60	2.00-6.00	0.07-0.15	Low	.17	.32		
	20-38	5-15	1.20-1.40	2.00-6.00	0.05-0.10	Low	.15	.32		
	38-48	---	---	0.20-2.00	---	---	---	---		
	48-50	---	---	0.00-0.20	---	---	---	---		
GdF:										
Germano---------	0-5	8-18	1.25-1.45	0.60-2.00	0.16-0.22	Low	.32	.37	3	3
	5-32	5-15	1.20-1.40	2.00-6.00	0.05-0.10	Low	.15	.32		
	32-36	---	---	0.20-2.00	---	---	---	---		
	36-40	---	---	0.20-2.00	---	---	---	---		
Rock outcrop.										
Gf:										
Gessie----------	0-10	18-27	1.30-1.60	0.60-2.00	0.14-0.24	Low	.37	.37	5	4L
	10-42	18-27	1.35-1.55	0.60-2.00	0.10-0.22	Low	.43	.43		
	42-80	5-20	1.40-1.70	0.60-2.00	0.05-0.22	Low	.32	.32		
Gg:										
Gessie----------	0-10	18-27	1.30-1.60	0.60-2.00	0.14-0.24	Low	.37	.37	5	4L
	10-50	18-27	1.35-1.55	0.60-2.00	0.10-0.22	Low	.43	.43		
	50-80	5-20	1.40-1.70	0.60-2.00	0.05-0.22	Low	.32	.32		
GkC:										
Gilpin----------	0-8	15-27	1.20-1.40	0.60-2.00	0.12-0.18	Low	.32	.32	3	8
	8-30	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	30-36	15-35	1.20-1.50	0.60-2.00	0.08-0.12	Low	.24	.32		
	36-39	---	---	0.20-2.00	---	---	---	---		
GkD:										
Gilpin----------	0-7	15-27	1.20-1.40	0.60-2.00	0.12-0.18	Low	.32	.32	3	8
	7-29	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	29-31	---	---	0.20-2.00	---	---	---	---		
GnB:										
Glenford--------	0-15	15-27	1.30-1.45	0.60-2.00	0.16-0.20	Low	.37	.37	5	6
	15-40	18-35	1.45-1.65	0.20-2.00	0.14-0.18	Moderate	.43	.43		
	40-67	18-35	1.45-1.65	0.20-0.60	0.13-0.17	Low	.43	.43		
	67-80	15-30	1.40-1.60	0.20-2.00	0.12-0.17	Low	.37	.37		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
GnC2:										
Glenford--------	0-5	15-27	1.30-1.45	0.60-2.00	0.16-0.20	Low	.37	.37	5	6
	5-9	18-35	1.45-1.65	0.20-2.00	0.14-0.18	Moderate	.43	.43		
	9-49	18-35	1.45-1.65	0.20-0.60	0.13-0.17	Low	.43	.43		
	49-80	15-30	1.40-1.60	0.20-2.00	0.12-0.17	Low	.37	.37		
HhC2:										
Hickory---------	0-8	19-25	1.30-1.50	0.60-2.00	0.20-0.22	Low	.37	.37	5	6
	8-54	24-35	1.45-1.65	0.60-2.00	0.15-0.19	Moderate	.28	.32		
	54-80	15-30	1.50-1.75	0.60-2.00	0.10-0.15	Low	.28	.32		
HkE:										
Hickory---------	0-6	19-25	1.30-1.50	0.60-2.00	0.20-0.22	Low	.37	.37	5	6
	6-50	24-35	1.45-1.65	0.60-2.00	0.15-0.19	Moderate	.28	.32		
	50-80	15-35	1.50-1.75	0.60-2.00	0.10-0.15	Low	.28	.32		
Germano---------	0-5	5-15	1.20-1.40	2.00-6.00	0.13-0.15	Low	.24	.28	3	3
	5-28	8-18	1.30-1.60	2.00-6.00	0.07-0.15	Low	.17	.32		
	28-40	5-15	1.20-1.40	2.00-6.00	0.05-0.10	Low	.15	.32		
	40-43	---	---	0.20-2.00	---	---	---	---		
	43-44	---	---	0.20-2.00	---	---	---	---		
HmD2:										
Hickory---------	0-7	19-25	1.30-1.50	0.60-2.00	0.20-0.22	Low	.37	.37	5	6
	7-50	24-35	1.45-1.65	0.60-2.00	0.15-0.19	Moderate	.28	.32		
	50-80	15-30	1.50-1.75	0.60-2.00	0.10-0.15	Low	.28	.32		
Gilpin----------	0-8	15-27	1.20-1.40	0.60-2.00	0.12-0.18	Low	.32	.32	3	8
	8-18	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	18-29	15-35	1.20-1.50	0.60-2.00	0.08-0.12	Low	.24	.32		
	29-32	---	---	0.20-2.00	---	---	---	---		
HnC2:										
Homewood--------	0-10	13-25	1.30-1.50	0.60-2.00	0.20-0.23	Low	.37	.37	4	5
	10-22	24-32	1.40-1.70	0.60-2.00	0.15-0.20	Moderate	.37	.43		
	22-48	24-32	1.60-1.90	0.06-0.20	0.06-0.10	Moderate	.37	.55		
	48-80	16-30	1.55-1.85	0.06-0.20	0.06-0.10	Low	.37	.55		
HoD2:										
Homewood--------	0-9	13-25	1.30-1.50	0.60-2.00	0.20-0.23	Low	.37	.37	4	5
	9-28	15-32	1.40-1.70	0.60-2.00	0.15-0.20	Moderate	.37	.43		
	28-42	24-32	1.60-1.90	0.06-0.20	0.06-0.10	Moderate	.37	.55		
	42-80	16-35	1.55-1.85	0.06-0.20	0.06-0.10	Low	.37	.55		
Gilpin----------	0-8	15-27	1.20-1.40	0.60-2.00	0.12-0.18	Low	.32	.32	3	8
	8-29	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	29-32	---	---	0.20-2.00	---	---	---	---		
HoE2:										
Homewood--------	0-7	13-25	1.30-1.50	0.60-2.00	0.20-0.23	Low	.37	.37	4	5
	7-26	15-32	1.40-1.70	0.60-2.00	0.15-0.20	Moderate	.37	.43		
	26-41	15-32	1.60-1.90	0.06-0.20	0.06-0.10	Moderate	.37	.55		
	41-80	16-35	1.55-1.85	0.06-0.20	0.06-0.10	Low	.37	.55		
Gilpin----------	0-7	15-27	1.20-1.40	0.60-2.00	0.12-0.18	Low	.32	.32	3	8
	7-29	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	29-32	---	---	0.20-2.00	---	---	---	---		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
JeB:										
Jeneva----------	0-8	12-27	1.20-1.40	0.60-2.00	0.22-0.24	Low	.37	.37	5	5
	8-54	20-32	1.30-1.50	0.60-2.00	0.18-0.20	Low	.37	.37		
	54-63	15-25	1.40-1.60	0.60-2.00	0.14-0.18	Low	.37	.37		
	63-75	15-25	1.40-1.70	0.60-2.00	0.10-0.14	Low	.37	.37		
	75-93	20-32	1.50-1.70	0.20-0.60	0.08-0.12	Moderate	.37	.43		
	93-115	---	---	0.20-0.60	---	---	---	---		
Km:										
Kokomo----------	0-8	20-27	1.30-1.60	0.60-2.00	0.18-0.24	Low	.28	.28	5	6
	8-80	35-45	1.40-1.70	0.20-0.60	0.12-0.21	Moderate	.28	.32		
	80-88	16-25	1.50-1.75	0.06-0.20	0.08-0.15	Low	.32	.37		
Ko:										
Kokomo----------	0-14	27-35	1.30-1.60	0.60-2.00	0.17-0.19	Moderate	.24	.24	5	7
	14-50	35-40	1.40-1.70	0.20-0.60	0.12-0.21	Moderate	.28	.32		
	50-80	15-45	1.50-1.75	0.06-0.20	0.08-0.15	Low	.32	.37		
Lk:										
Lindside--------	0-9	15-27	1.20-1.40	0.60-2.00	0.20-0.26	Low	.32	.32	5	5
	9-40	18-35	1.20-1.40	0.20-2.00	0.17-0.22	Low	.37	.37		
	40-80	18-35	1.20-1.40	0.20-6.00	0.12-0.18	Low	.32	.32		
LtC2:										
Loudonville-----	0-6	12-27	1.30-1.50	2.00-6.00	0.16-0.22	Low	.32	.37	5	2
	6-30	18-35	1.30-1.60	0.60-6.00	0.10-0.16	Low	.32	.55		
	30-35	18-35	1.30-1.60	0.60-6.00	0.10-0.16	Low	.32	.55		
	35-40	---	---	0.00-0.20	---	---	---	---		
Steinsburg------	0-7	10-20	1.20-1.40	2.00-6.00	0.10-0.16	Low	.28	.28	3	3
	7-16	10-20	1.20-1.40	2.00-6.00	0.10-0.16	Low	.20	.24		
	16-30	5-18	1.10-1.40	2.00-6.00	0.04-0.08	Low	.20	.28		
	30-35	---	---	0.60-6.00	---	---	---	---		
LtD2:										
Loudonville-----	0-4	12-27	1.30-1.50	2.00-6.00	0.16-0.22	Low	.32	.37	2	5
	4-24	18-35	1.30-1.60	0.60-6.00	0.10-0.16	Low	.32	.55		
	24-36	22-38	1.20-1.60	0.60-6.00	0.06-0.14	Low	.32	.49		
	36-39	---	---	0.00-0.20	---	---	---	---		
Steinsburg------	0-7	10-20	1.20-1.40	2.00-6.00	0.10-0.16	Low	.28	.28	3	3
	7-30	10-20	1.20-1.40	2.00-6.00	0.10-0.16	Low	.20	.24		
	30-40	5-18	1.10-1.40	2.00-6.00	0.04-0.08	Low	.20	.28		
	40-45	---	---	0.60-6.00	---	---	---	---		
LtE:										
Loudonville-----	0-5	12-27	1.30-1.50	2.00-6.00	0.16-0.22	Low	.32	.37	2	5
	5-18	18-35	1.30-1.60	0.60-6.00	0.10-0.16	Low	.32	.55		
	18-37	18-38	1.20-1.60	0.60-6.00	0.06-0.14	Low	.32	.49		
	37-40	---	---	0.00-0.20	---	---	---	---		
Steinsburg------	0-3	10-20	1.20-1.40	2.00-6.00	0.10-0.14	Low	.20	.28	3	6
	3-30	5-18	1.10-1.40	2.00-6.00	0.04-0.08	Low	.20	.28		
	30-33	---	---	0.60-6.00	---	---	---	---		
LtF:										
Loudonville-----	0-5	13-22	1.30-1.50	0.60-2.00	0.16-0.20	Low	.32	.37	2	5
	5-16	15-34	1.35-1.60	0.60-2.00	0.14-0.18	Moderate	.32	.37		
	16-38	15-34	1.35-1.60	0.60-2.00	0.14-0.18	Moderate	.32	.37		
	38-40	---	---	0.00-0.20	---	---	---	---		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors			Wind erodi- bility group
							Kw	Kf	T	
	In	Pct	g/cc	In/hr	In/in					
LtF:										
Steinsburg------	0-4	10-20	1.20-1.40	2.00-6.00	0.10-0.16	Low	.28	.28	3	3
	4-17	10-20	1.20-1.40	2.00-6.00	0.10-0.16	Low	.20	.24		
	17-20	---	---	0.60-6.00	---	---	---	---		
Ma:										
Marengo---------	0-17	27-35	1.35-1.55	0.60-2.00	0.15-0.19	Moderate	.24	.24	5	6
	17-68	22-35	1.40-1.75	0.20-2.00	0.15-0.20	Moderate	.28	.32		
	68-80	15-33	1.65-1.85	0.20-2.00	0.08-0.12	Low	.28	.32		
Mb:										
Marengo---------	0-18	17-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.28	.28	5	6
	18-80	22-35	1.40-1.75	0.20-2.00	0.15-0.20	Moderate	.28	.32		
McB:										
McGary----------	0-7	20-27	1.30-1.60	0.60-2.00	0.18-0.24	Low	.49	.49	3	6
	7-30	30-50	1.45-1.60	0.06-0.60	0.11-0.18	High	.32	.32		
	30-80	25-50	1.50-1.65	0.01-0.06	0.11-0.18	Moderate	.43	.43		
Me:										
Medway----------	0-15	18-27	1.20-1.45	0.60-2.00	0.20-0.24	Low	.28	.28	5	6
	15-40	18-32	1.20-1.50	0.60-2.00	0.14-0.18	Low	.32	.37		
	40-80	5-30	1.20-1.60	0.60-6.00	0.08-0.15	Low	.32	.49		
MkB2:										
Miamian---------	0-9	14-27	1.30-1.50	0.60-2.00	0.20-0.24	Low	.37	.37	4	6
	9-32	35-48	1.45-1.70	0.20-0.60	0.12-0.17	Moderate	.37	.43		
	32-80	16-31	1.60-1.85	0.20-0.60	0.06-0.10	Low	.37	.49		
MkC2:										
Miamian---------	0-7	14-27	1.30-1.50	0.60-2.00	0.20-0.24	Low	.37	.37	4	6
	7-28	25-35	1.40-1.60	0.20-0.60	0.16-0.20	Moderate	.37	.43		
	28-80	35-48	1.45-1.70	0.20-0.60	0.12-0.17	Moderate	.37	.43		
MmC3:										
Miamian---------	0-5	27-32	1.35-1.55	0.20-0.60	0.17-0.23	Moderate	.37	.37	4	7
	5-25	27-48	1.45-1.70	0.20-0.60	0.12-0.17	Moderate	.37	.43		
	25-80	16-31	1.60-1.85	0.20-0.60	0.06-0.10	Low	.37	.49		
Thrifton--------	0-8	27-40	1.45-1.70	0.20-0.60	0.12-0.17	Moderate	.32	.37	5	6
	8-14	27-35	1.45-1.70	0.20-0.60	0.12-0.17	Moderate	.32	.37		
	14-80	10-27	1.60-1.85	0.20-0.60	0.06-0.10	Low	.32	.32		
MmD3:										
Miamian---------	0-3	27-32	1.35-1.55	0.20-0.60	0.17-0.23	Moderate	.37	.37	4	7
	3-27	27-48	1.45-1.70	0.20-0.60	0.12-0.17	Moderate	.37	.43		
	27-80	16-35	1.60-1.85	0.20-0.60	0.06-0.10	Low	.37	.49		
Thrifton--------	0-4	27-40	1.45-1.70	0.20-0.60	0.12-0.17	Moderate	.32	.37	5	6
	4-18	26-35	1.45-1.70	0.20-0.60	0.12-0.17	Moderate	.32	.37		
	18-80	10-28	1.60-1.85	0.20-0.60	0.06-0.10	Low	.32	.32		
Mo:										
Montgomery------	0-10	35-40	1.30-1.55	0.60-2.00	0.17-0.22	Moderate	.32	.32	5	4
	10-57	40-50	1.45-1.65	0.06-0.60	0.11-0.14	High	.37	.37		
	57-80	28-48	1.50-1.60	0.06-0.20	0.11-0.18	Moderate	.49	.49		
Mr:										
Muskego---------	0-5	0-0	0.10-0.21	0.60-6.00	0.35-0.45	---	---	---	1	2
	5-27	0-0	0.10-0.21	0.60-6.00	0.35-0.45	---	---	---		
	27-80	18-35	0.30-1.10	0.06-0.20	0.18-0.24	Moderate	.28	.28		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
NaD2:										
Negley----------	0-6	12-27	1.30-1.50	2.00-6.00	0.16-0.22	Low	.32	.37	5	5
	6-70	22-38	1.20-1.60	0.60-6.00	0.06-0.14	Low	.32	.49		
	70-80	22-38	1.20-1.60	0.60-6.00	0.06-0.14	Low	.32	.49		
NaE:										
Negley----------	0-5	12-27	1.30-1.50	2.00-6.00	0.16-0.22	Low	.32	.37	5	5
	5-67	18-35	1.30-1.60	0.60-6.00	0.10-0.16	Low	.32	.55		
	67-92	22-38	1.20-1.60	0.60-6.00	0.06-0.14	Low	.32	.49		
	92-101	2-30	1.30-1.60	6.00-20.00	0.06-0.10	Low	.32	.55		
Ne:										
Newark----------	0-11	7-27	1.20-1.40	0.60-2.00	0.15-0.23	Low	.43	.43	5	5
	11-50	18-35	1.20-1.45	0.60-2.00	0.18-0.23	Low	.43	.43		
	50-80	12-40	1.30-1.50	0.60-2.00	0.15-0.22	Low	.43	.43		
OcA:										
Ockley----------	0-10	11-22	1.30-1.60	0.60-2.00	0.16-0.24	Low	.37	.37	4	5
	10-16	20-32	1.40-1.60	0.60-2.00	0.13-0.20	Moderate	.32	.37		
	16-50	10-40	1.40-1.70	0.60-6.00	0.05-0.20	Moderate	.10	.20		
	50-80	2-5	1.60-1.80	20.00-99.90	0.02-0.04	Low	.02	.10		
OcB:										
Ockley----------	0-10	11-22	1.30-1.60	0.60-2.00	0.16-0.24	Low	.37	.37	4	5
	10-35	20-32	1.40-1.60	0.60-2.00	0.13-0.20	Moderate	.32	.37		
	35-50	10-32	1.40-1.70	0.60-6.00	0.05-0.20	Moderate	.10	.20		
	50-80	2-5	1.60-1.80	20.00-99.90	0.02-0.04	Low	.02	.10		
Pa:										
Patton----------	0-15	27-35	1.15-1.35	0.60-2.00	0.21-0.23	Moderate	.28	.28	5	7
	15-48	27-35	1.25-1.45	0.60-2.00	0.18-0.20	Moderate	.43	.43		
	48-80	22-35	1.30-1.50	0.20-0.60	0.18-0.22	Moderate	.43	.43		
Pb:										
Patton----------	0-18	27-35	1.15-1.35	0.60-2.00	0.21-0.23	Moderate	.28	.28	5	7
	18-56	27-35	1.25-1.45	0.60-2.00	0.18-0.20	Moderate	.43	.43		
	56-80	15-30	1.30-1.50	0.20-0.60	0.18-0.22	Moderate	.43	.43		
Pe:										
Pewamo----------	0-18	27-40	1.35-1.55	0.60-2.00	0.20-0.23	Moderate	.28	.28	5	7
	18-60	35-50	1.40-1.70	0.20-0.60	0.08-0.16	Moderate	.32	.32		
	60-80	27-38	1.50-1.70	0.20-0.60	0.14-0.18	Moderate	.37	.37		
Ph.										
Pits										
PkB:										
Pike------------	0-13	12-20	1.30-1.65	0.60-2.00	0.18-0.24	Low	.43	.43	5	5
	13-45	18-30	1.40-1.70	0.60-2.00	0.14-0.21	Moderate	.43	.43		
	45-80	18-27	1.40-1.70	0.60-2.00	0.16-0.20	Low	.43	.43		
	80-120	18-32	1.40-1.70	0.60-2.00	0.16-0.20	Low	.43	.43		
PkC2:										
Pike------------	0-7	12-20	1.30-1.65	0.60-2.00	0.18-0.24	Low	.43	.43	5	5
	7-50	18-30	1.40-1.70	0.60-2.00	0.14-0.21	Moderate	.43	.43		
	50-68	18-35	1.40-1.70	0.60-2.00	0.16-0.20	Low	.43	.43		
	68-80	18-33	1.40-1.70	0.60-2.00	0.16-0.20	Low	.43	.43		
Ro:										
Rockmill--------	0-13	27-35	1.15-1.40	0.60-2.00	0.16-0.21	Low	.37	.37	5	6
	13-18	15-27	1.15-1.45	0.60-2.00	0.15-0.20	Low	.37	.37		
	18-80	---	0.25-0.45	2.00-20.00	0.35-0.45	---	.10	.10		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
Rp:										
Rockmill--------	0-10	27-35	1.15-1.40	0.60-2.00	0.16-0.21	Low	.37	.37	5	6
	10-22	15-27	1.15-1.45	0.60-2.00	0.15-0.20	Low	.37	.37		
	22-80	---	0.25-0.45	2.00-20.00	0.35-0.45	---	.10	.10		
Rt:										
Rossburg--------	0-22	13-27	1.20-1.50	0.60-2.00	0.19-0.24	Low	.37	.37	5	6
	22-55	18-27	1.25-1.60	0.60-2.00	0.15-0.22	Low	.37	.37		
	55-80	5-15	1.30-1.60	2.00-20.00	0.05-0.15	Low	.24	.28		
Sc:										
Sebring---------	0-9	18-27	1.30-1.45	0.60-2.00	0.18-0.22	Low	.37	.37	5	6
	9-38	22-35	1.45-1.70	0.20-0.60	0.14-0.18	Moderate	.37	.37		
	38-53	15-30	1.40-1.65	0.20-2.00	0.12-0.16	Moderate	.37	.37		
	53-80	15-30	1.40-1.65	0.20-2.00	0.12-0.16	Moderate	.37	.37		
SdD:										
Shelocta--------	0-3	10-25	1.15-1.30	0.60-2.00	0.16-0.22	Low	.32	.32	5	5
	3-65	18-34	1.30-1.55	0.60-2.00	0.10-0.20	Low	.28	.32		
	65-70	15-34	1.30-1.55	0.60-6.00	0.08-0.16	Low	.17	.28		
	70-80	---	---	0.60-2.00	---	---	---	---		
SeE:										
Shelocta--------	0-8	10-25	1.15-1.30	0.60-2.00	0.16-0.22	Low	.32	.32	5	5
	8-56	18-34	1.30-1.55	0.60-2.00	0.10-0.20	Low	.28	.32		
	56-80	15-34	1.30-1.55	0.60-6.00	0.08-0.16	Low	.17	.28		
Berks-----------	0-2	5-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	2-24	5-32	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	24-27	---	---	0.00-0.20	---	---	---	---		
	27-28	---	---	0.00-0.20	---	---	---	---		
SfD:										
Shelocta--------	0-7	10-25	1.15-1.30	0.60-2.00	0.16-0.22	Low	.32	.32	5	5
	7-64	18-34	1.30-1.55	0.60-2.00	0.10-0.20	Low	.28	.32		
	64-95	14-40	1.30-1.55	0.60-6.00	0.08-0.16	Low	.17	.28		
	95-100	---	---	0.60-2.00	---	---	---	---		
Cruze-----------	0-9	15-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.43	.49	4	5
	9-13	15-35	1.35-1.55	0.20-0.60	0.13-0.22	Moderate	.43	.64		
	13-45	30-55	1.40-1.65	0.06-0.60	0.08-0.16	High	.32	.49		
	45-53	40-60	1.50-1.65	0.06-0.60	0.07-0.12	High	.32	.49		
	53-63	---	---	0.00-0.20	---	---	---	---		
SfE:										
Shelocta--------	0-7	10-25	1.15-1.30	0.60-2.00	0.16-0.22	Low	.32	.32	5	5
	7-64	18-34	1.30-1.55	0.60-2.00	0.10-0.20	Low	.28	.32		
	64-95	14-34	1.30-1.55	0.60-6.00	0.08-0.16	Low	.17	.28		
	95-100	---	---	0.60-2.00	---	---	---	---		
Cruze-----------	0-9	15-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.43	.49	4	5
	9-17	15-35	1.35-1.55	0.20-0.60	0.13-0.22	Moderate	.43	.64		
	17-45	30-55	1.40-1.65	0.06-0.60	0.08-0.16	High	.32	.49		
	45-53	40-60	1.50-1.65	0.06-0.60	0.07-0.12	High	.32	.49		
	53-80	---	---	0.00-0.20	---	---	---	---		
Sh:										
Shoals----------	0-8	18-27	1.30-1.60	0.60-2.00	0.20-0.24	Low	.24	.24	5	6
	8-48	18-33	1.40-1.70	0.60-2.00	0.15-0.22	Moderate	.32	.32		
	48-80	5-35	1.35-1.65	0.60-2.00	0.05-0.20	Low	.37	.37		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
SkA:										
Sleeth----------	0-8	11-22	1.30-1.60	0.60-2.00	0.16-0.24	Low	.32	.32	4	5
	8-25	15-35	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	.24	.24		
	25-54	18-35	1.50-1.70	0.60-2.00	0.07-0.16	Moderate	.17	.24		
	54-80	0-5	1.70-2.10	20.00-99.90	0.02-0.04	Low	.02	.05		
St:										
Stonelick-------	0-12	8-18	1.25-1.50	2.00-6.00	0.09-0.14	Low	.24	.28	5	3
	12-80	5-15	1.30-1.55	2.00-6.00	0.08-0.14	Low	.24	.28		
TaC2:										
Tarlton---------	0-6	12-27	1.30-1.50	0.60-2.00	0.18-0.22	Low	.37	.37	3	6
	6-21	27-40	1.40-1.60	0.20-0.60	0.13-0.17	Moderate	.37	.37		
	21-34	40-50	1.40-1.70	0.06-0.20	0.06-0.12	High	.37	.55		
	34-39	---	---	0.06-0.20	---	---	---	---		
	39-42	---	---	0.06-0.20	---	---	---	---		
ThA:										
Thackery--------	0-8	15-25	1.30-1.50	0.60-2.00	0.20-0.24	Low	.37	.37	4	5
	8-40	20-30	1.30-1.55	0.60-2.00	0.17-0.22	Low	.37	.37		
	40-64	15-32	1.35-1.60	0.60-2.00	0.13-0.18	Moderate	.37	.43		
	64-80	2-12	1.60-1.80	6.00-20.00	0.02-0.06	Low	.10	.49		
ThB:										
Thackery--------	0-12	15-25	1.30-1.50	0.60-2.00	0.20-0.24	Low	.37	.37	4	5
	12-17	20-30	1.30-1.55	0.60-2.00	0.17-0.22	Low	.37	.37		
	17-30	25-35	1.35-1.60	0.60-2.00	0.13-0.18	Moderate	.37	.43		
	30-54	2-12	1.60-1.80	6.00-20.00	0.02-0.06	Low	.10	.49		
	54-80	2-12	1.60-1.80	6.00-20.00	0.02-0.06	Low	.10	.49		
Ud, Uf, Ug.										
Udorthents										
Um:										
Urban land.										
Aetna-----------	0-20	15-27	1.20-1.45	0.60-2.00	0.16-0.20	Low	.37	.37	5	6
	20-80	20-35	1.25-1.65	0.60-2.00	0.16-0.20	Low	.37	.37		
UoC:										
Urban land.										
Amanda----------	0-7	12-27	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	6
	7-20	23-35	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	.37	.43		
	20-40	23-35	1.45-1.70	0.20-0.60	0.13-0.19	Moderate	.37	.49		
	40-80	15-25	1.50-1.85	0.20-0.60	0.08-0.12	Low	.37	.49		
UrB:										
Urban land.										
Bennington------	0-8	15-25	1.30-1.50	0.60-2.00	0.17-0.21	Low	.43	.43	5	6
	8-36	35-42	1.40-1.70	0.06-0.60	0.10-0.17	Moderate	.32	.37		
	36-80	24-33	1.65-1.80	0.06-0.20	0.07-0.12	Low	.32	.37		
UtC:										
Urban land.										
Cardington------	0-10	15-28	1.35-1.55	0.20-0.60	0.17-0.22	Moderate	.37	.37	5	7
	10-30	35-42	1.45-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.43		
	30-80	24-33	1.65-1.82	0.20-0.60	0.07-0.12	Low	.37	.43		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
UuB:										
Urban land.										
Celina----------	0-8	14-26	1.30-1.50	0.60-2.00	0.20-0.24	Low	.37	.37	4	6
	8-28	30-48	1.45-1.60	0.20-0.60	0.16-0.19	Moderate	.37	.37		
	28-80	16-35	1.60-1.82	0.20-0.60	0.06-0.10	Low	.37	.49		
UxB:										
Urban land.										
Ockley----------	0-11	11-22	1.30-1.60	0.60-2.00	0.16-0.24	Low	.37	.37	4	5
	11-23	15-34	1.40-1.60	0.60-2.00	0.13-0.20	Moderate	.32	.37		
	23-44	10-32	1.40-1.70	0.60-6.00	0.05-0.20	Moderate	.10	.20		
	44-80	2-5	1.60-1.80	20.00-99.90	0.02-0.04	Low	.02	.10		
Uy:										
Urban land.										
Udorthents.										
WdA:										
Wea-------------	0-8	12-22	1.30-1.60	0.60-2.00	0.16-0.24	Low	.32	.32	4	5
	8-38	20-32	1.40-1.60	0.60-2.00	0.14-0.21	Moderate	.32	.43		
	38-55	18-35	1.50-1.70	0.60-2.00	0.07-0.16	Moderate	.10	.20		
	55-80	1-5	1.60-1.80	20.00-99.90	0.02-0.04	Low	.02	.05		
WeC:										
Wellston--------	0-7	13-27	1.30-1.50	0.60-2.00	0.18-0.22	Low	.37	.37	3	6
	7-48	18-35	1.30-1.65	0.60-2.00	0.17-0.21	Low	.37	.43		
	48-72	---	---	0.00-0.20	---	---	---	---		
WfC:										
Wellston--------	0-8	13-27	1.30-1.50	0.60-2.00	0.18-0.22	Low	.37	.37	3	6
	8-39	18-35	1.30-1.65	0.60-2.00	0.17-0.21	Low	.37	.43		
	39-55	15-30	1.30-1.60	0.60-2.00	0.06-0.16	Low	.20	.43		
	55-58	---	---	0.00-0.20	---	---	---	---		
Cruze-----------	0-6	15-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.43	.49	4	5
	6-15	20-35	1.35-1.55	0.20-0.60	0.13-0.22	Moderate	.43	.64		
	15-37	35-55	1.40-1.65	0.06-0.60	0.08-0.16	High	.32	.49		
	37-45	30-50	1.50-1.65	0.06-0.60	0.07-0.12	High	.32	.49		
	45-50	---	---	0.00-0.20	---	---	---	---		
Wg:										
Westland--------	0-10	15-27	1.30-1.60	0.60-2.00	0.19-0.24	Low	.24	.28	4	6
	10-54	5-35	1.40-1.65	0.60-2.00	0.13-0.19	Moderate	.28	.32		
	54-80	5-18	1.55-1.70	0.60-2.00	0.07-0.17	Low	.24	.37		
	80-86	1-10	1.70-2.10	20.00-99.90	0.01-0.04	Low	.05	.10		
Wk:										
Westland--------	0-12	27-34	1.40-1.60	0.60-2.00	0.20-0.23	Moderate	.24	.28	4	7
	12-34	5-35	1.40-1.65	0.60-2.00	0.13-0.19	Moderate	.28	.32		
	34-60	5-18	1.55-1.70	0.60-2.00	0.07-0.17	Low	.24	.37		
	60-80	1-10	1.70-2.10	20.00-99.90	0.01-0.04	Low	.05	.10		
ZnB:										
Zanesville------	0-7	12-27	1.35-1.40	0.60-2.00	0.19-0.23	Low	.43	.43	4	5
	7-34	18-35	1.35-1.45	0.60-2.00	0.17-0.22	Low	.37	.37		
	34-55	18-33	1.50-1.75	0.06-0.60	0.08-0.12	Low	.37	.43		
	55-75	20-40	1.50-1.70	0.20-2.00	0.08-0.12	Low	.28	.32		
	75-78	---	---	0.00-0.20	---	---	---	---		

Table 23.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Erosion factors			Wind erodi-bility group
							Kw	Kf	T	
	In	Pct	g/cc	In/hr	In/in					
ZnC2:										
Zanesville------	0-6	12-27	1.35-1.40	0.60-2.00	0.19-0.23	Low	.43	.43	4	5
	6-24	18-35	1.35-1.45	0.60-2.00	0.17-0.22	Low	.37	.37		
	24-48	18-33	1.50-1.75	0.06-0.60	0.08-0.12	Low	.37	.43		
	48-52	15-40	1.50-1.70	0.20-2.00	0.08-0.12	Low	.28	.32		
	52-55	---	---	0.00-0.20	---	---	---	---		

Table 24.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
AfB:					
Alford----------	0-13	4.5-5.5	0.5-3.0	5.0-18	0
	13-46	4.5-5.5	0.0-1.0	10-24	0
	46-76	4.5-6.5	0.0-0.5	4.0-12	0
	76-80	4.5-6.5	0.0-0.5	4.0-12	0
AfC2:					
Alford----------	0-8	4.5-5.5	0.5-3.0	5.0-18	0
	8-74	4.5-5.5	0.0-1.0	10-24	0
	74-80	4.5-6.5	0.0-0.5	4.0-12	0
Ag:					
Aetna-----------	0-7	6.1-7.3	2.0-4.0	10-24	0
	7-23	5.8-7.8	0.5-1.0	10-24	0-5
	23-63	6.1-7.8	0.0-0.5	10-24	0-5
	63-80	6.1-7.8	0.0-0.5	10-22	0-5
Ah:					
Aetna-----------	0-7	6.1-7.3	2.0-4.0	10-24	0
	7-23	5.8-7.8	0.5-1.0	10-24	0-5
	23-63	6.1-7.8	0.0-0.5	10-28	0-5
	63-80	6.1-7.8	0.0-0.5	10-22	0-5
AmB:					
Amanda----------	0-9	5.1-7.3	1.0-3.0	10-20	0
	9-24	4.5-5.5	0.3-1.0	10-20	0
	24-43	5.6-7.8	0.1-0.5	10-20	0
	43-80	7.4-8.4	0.1-0.3	6.0-16	0-22
AmB2:					
Amanda----------	0-7	5.1-7.3	1.0-3.0	10-20	0
	7-20	4.5-5.5	0.3-1.0	10-20	0
	20-62	5.6-7.8	0.1-0.5	10-20	0
	62-80	7.4-8.4	0.1-0.3	6.0-16	0-22
AmC2:					
Amanda----------	0-8	5.1-7.3	1.0-3.0	10-20	0
	8-34	4.5-5.5	0.3-1.0	10-20	0
	34-55	5.6-7.8	0.1-0.5	10-20	0
	55-80	7.4-8.4	0.1-0.3	6.0-16	0-22
AmD2:					
Amanda----------	0-4	5.1-7.3	1.0-3.0	10-20	0
	4-20	5.6-7.8	0.1-0.5	10-20	0
	20-28	7.4-8.4	0.1-0.3	6.0-16	0
	28-80	7.4-8.4	0.1-0.3	6.0-16	0-22
AmE2:					
Amanda----------	0-7	5.1-7.3	1.0-3.0	10-20	0
	7-30	5.6-7.8	0.1-0.5	10-20	0
	30-33	7.4-8.4	0.1-0.3	6.0-16	0
	33-80	7.4-8.4	0.1-0.3	6.0-16	0-22
AoC3:					
Amanda----------	0-6	5.1-7.3	0.5-2.0	12-22	0
	6-24	5.6-7.8	0.1-0.5	10-20	0
	24-30	7.4-8.4	0.1-0.3	6.0-16	0
	30-80	7.4-8.4	0.1-0.3	6.0-16	0-22

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
AoD3:					
Amanda----------	0-5	5.1-7.3	0.5-2.0	12-22	0
	5-30	5.6-7.8	0.1-0.5	10-20	0
	30-36	7.4-8.4	0.1-0.3	6.0-16	0
	36-80	7.4-8.4	0.1-0.3	6.0-16	0-22
ApB2:					
Amanda----------	0-6	5.1-7.3	1.0-3.0	10-20	0
	6-52	5.6-7.8	0.1-0.5	10-20	0
	52-80	7.4-8.4	0.1-0.3	6.0-16	0-22
Loudonville-----	0-5	4.5-6.0	1.0-3.0	8.0-18	0
	5-25	4.5-6.0	0.3-1.0	8.0-15	0
	25-39	4.5-6.0	0.1-0.3	7.0-14	0
	39-49	---	---	---	---
ApC2:					
Amanda----------	0-10	5.1-7.3	1.0-3.0	10-20	0
	10-39	4.5-5.5	0.3-1.0	10-20	0
	39-70	5.6-7.8	0.1-0.5	10-20	0
	70-80	7.4-8.4	0.1-0.3	6.0-16	0-22
Loudonville-----	0-6	4.5-6.0	1.0-3.0	8.0-18	0
	6-35	4.5-6.0	0.3-1.0	8.0-15	0
	35-48	---	---	---	---
ApD2:					
Amanda----------	0-10	5.1-7.3	1.0-3.0	10-20	0
	10-30	5.6-7.8	0.1-0.5	10-20	0
	30-80	7.4-8.4	0.1-0.3	6.0-16	0-22
Loudonville-----	0-4	4.5-6.0	1.0-3.0	8.0-18	0
	4-20	4.5-6.0	0.3-1.0	8.0-15	0
	20-36	4.5-6.0	0.1-0.3	7.0-14	0
	36-39	---	---	---	---
ArC2:					
Amanda----------	0-8	5.1-7.3	1.0-3.0	10-20	0
	8-44	5.6-7.8	0.1-0.5	10-20	0
	44-80	7.4-8.4	0.1-0.3	6.0-16	0-22
Ockley----------	0-5	5.6-7.3	1.0-3.0	3.0-15	0
	5-22	4.5-6.5	0.5-1.0	5.0-15	0
	22-47	5.1-7.3	0.5-1.0	2.0-15	0
	47-80	7.4-8.4	0.0-0.5	1.0-3.0	20-50
ArD2:					
Amanda----------	0-6	5.1-7.3	1.0-3.0	10-20	0
	6-36	5.6-7.8	0.1-0.5	10-20	0
	36-80	7.4-8.4	0.1-0.3	6.0-16	0-22
Ockley----------	0-6	5.6-7.3	1.0-3.0	3.0-15	0
	6-24	4.5-6.5	0.5-1.0	5.0-15	0
	24-35	5.1-7.3	0.5-1.0	2.0-15	0
	35-80	7.4-8.4	0.0-0.5	1.0-3.0	20-50
Bb:					
Beaucoup--------	0-20	5.6-7.8	5.0-6.0	26-33	0
	20-54	5.6-7.8	0.0-2.0	16-25	0
	54-80	6.1-7.8	0.0-1.0	9.0-20	0-5

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
BeA:					
Bennington------	0-9	4.5-7.3	2.0-4.0	12-20	0
	9-46	5.6-8.4	0.5-1.0	20-26	0
	46-80	7.4-8.4	0.1-0.3	9.0-20	10-20
BeB:					
Bennington------	0-9	4.5-7.3	2.0-4.0	12-20	0
	9-30	5.6-8.4	0.5-1.0	20-26	0
	30-80	7.4-8.4	0.1-0.3	9.0-20	10-20
BkF:					
Berks-----------	0-4	3.5-6.5	2.0-4.0	5.0-15	0
	4-25	3.5-6.5	0.0-0.5	0.0-10	0
	25-28	---	---	---	---
	28-30	---	---	---	---
CaB:					
Cardington------	0-8	4.5-7.3	1.0-3.0	12-18	0
	8-33	4.5-7.8	0.5-1.0	18-24	0
	33-80	7.4-8.4	0.1-0.3	9.0-20	8-22
CaB2:					
Cardington------	0-6	4.5-7.3	1.0-3.0	12-18	0
	6-30	4.5-7.8	0.5-1.0	18-24	0
	30-80	7.4-8.4	0.1-0.3	9.0-20	8-22
CaC2:					
Cardington------	0-8	4.5-7.3	1.0-3.0	12-18	0
	8-28	4.5-7.8	0.5-1.0	18-24	0
	28-80	7.4-8.4	0.1-0.3	9.0-20	8-22
CaD2:					
Cardington------	0-9	4.5-7.3	1.0-3.0	12-18	0
	9-30	4.5-7.8	0.5-1.0	18-24	0
	30-80	7.4-8.4	0.1-0.3	9.0-20	8-22
Cb:					
Carlisle--------	0-12	4.5-7.3	70-99	150-230	0
	12-30	4.5-7.3	70-99	150-230	0
	30-80	4.5-7.3	70-99	150-230	0
CdF:					
Cedarfalls------	0-5	3.5-5.5	1.0-3.0	4.0-15	0
	5-20	3.5-5.5	0.3-1.0	1.0-9.0	0
	20-57	3.5-5.5	0.1-0.3	1.0-4.0	0
	57-60	---	---	---	---
Rock outcrop.					
CeB:					
Celina----------	0-9	5.6-7.3	1.0-3.0	9.0-19	0
	9-36	4.5-7.8	0.5-1.0	18-32	0-15
	36-80	7.4-8.4	0.3-0.5	8.0-14	25-45
CfB:					
Centerburg------	0-8	4.5-7.3	1.0-3.0	12-20	0
	8-19	4.5-6.0	0.3-1.0	12-20	0
	19-46	5.1-7.8	0.1-0.5	10-24	0
	46-80	6.6-8.4	0.1-0.3	9.0-20	0-22

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
CfB2:					
Centerburg------	0-6	4.5-7.3	1.0-3.0	12-20	0
	6-32	4.5-6.0	0.3-1.0	12-20	0
	32-80	6.6-8.4	0.1-0.3	9.0-20	0-22
CfC2:					
Centerburg------	0-8	4.5-7.3	1.0-3.0	12-20	0
	8-16	5.1-7.8	0.1-0.5	12-20	0
	16-44	6.6-8.4	0.1-0.3	12-20	0-22
	44-80	6.6-8.4	0.1-0.3	9.0-20	0-22
Cg:					
Chagrin---------	0-8	5.6-7.3	2.0-4.0	10-24	0
	8-36	5.6-7.3	0.5-1.0	5.0-20	0
	36-80	5.6-7.3	0.3-1.0	2.0-12	0
CkC2:					
Cincinnati------	0-9	4.5-7.3	0.5-2.0	7.0-18	0
	9-30	4.5-5.5	0.0-1.0	7.0-18	0
	30-46	4.5-6.0	0.0-0.5	6.0-18	0
	46-94	4.5-7.3	0.0-0.5	8.0-18	0
CmC2:					
Cincinnati------	0-8	4.5-7.3	0.5-2.0	7.0-18	0
	8-22	4.5-5.5	0.0-1.0	7.0-18	0
	22-50	4.5-6.0	0.0-0.5	6.0-18	0
	50-80	4.5-7.3	0.0-0.5	8.0-18	0
Wellston--------	0-7	3.5-6.0	1.0-3.0	8.0-16	0
	7-42	4.5-6.0	0.3-1.0	5.0-20	0
	42-48	4.5-6.0	0.1-0.5	5.0-15	0
	48-72	---	---	---	---
Cn:					
Condit----------	0-9	4.5-7.3	2.0-4.0	5.0-10	0
	9-30	4.5-6.5	0.5-2.0	10-20	0
	30-44	5.6-7.8	0.5-1.0	10-20	5-20
	44-80	7.4-8.4	0.5-1.0	10-20	5-20
CoB:					
Corwin----------	0-15	5.1-7.3	2.0-4.0	10-24	0
	15-38	5.1-6.5	0.5-1.0	11-23	0
	38-80	7.4-8.4	0.0-1.0	4.0-17	5-30
CrA:					
Crosby----------	0-8	5.1-7.3	1.0-3.0	6.0-20	0
	8-38	5.1-7.3	0.5-1.0	15-29	0
	38-80	7.4-8.4	0.0-0.5	5.0-17	20-50
CsA:					
Canal-----------	0-9	4.5-7.3	2.0-4.0	10-20	0
	9-14	4.5-6.0	0.5-1.0	20-30	0
	14-45	5.6-7.3	0.5-1.0	5.0-20	0
	45-80	5.6-7.8	0.0-0.5	16-36	0-15
Ee:					
Eel-------------	0-8	6.1-7.3	2.0-3.0	12-20	0
	8-30	6.1-7.8	1.0-2.0	12-20	0
	30-55	6.6-7.8	1.0-2.0	8.0-18	5-35
	55-80	7.4-8.4	0.0-1.0	8.0-18	5-35

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
EkA:					
Eldean----------	0-8	5.6-7.3	1.0-3.0	8.0-21	0
	8-34	5.6-7.3	0.5-1.0	20-30	0
	34-80	7.4-8.4	0.5-1.0	1.0-8.0	40-65
EkB:					
Eldean----------	0-7	5.6-7.3	1.0-3.0	8.0-21	0
	7-35	5.6-7.3	0.5-1.0	20-30	0
	35-80	7.4-8.4	0.5-1.0	1.0-8.0	40-65
EnC2:					
Eldean----------	0-8	5.6-7.3	1.0-3.0	8.0-22	0
	8-34	5.6-7.3	0.3-1.0	20-30	0
	34-80	7.4-8.4	0.1-0.3	1.0-8.0	40-65
Eu:					
Euclid----------	0-15	4.5-6.5	2.0-3.0	10-20	0
	15-50	4.5-6.5	0.5-1.0	9.0-18	0
	50-80	5.6-7.8	0.1-0.5	7.0-16	0
FbA:					
Fitchville------	0-10	4.5-6.0	2.0-3.0	14-22	0
	10-63	4.5-6.0	0.5-1.0	10-25	0
	63-80	5.6-7.8	0.1-0.5	0.0-0.0	0-5
FhA:					
Fox-------------	0-10	5.1-7.3	1.0-3.0	4.0-20	0
	10-35	5.6-7.8	0.0-0.5	10-34	0-45
	35-80	7.4-8.4	0.0-0.5	0.0-3.0	5-45
FhB:					
Fox-------------	0-10	5.1-7.3	1.0-3.0	4.0-20	0
	10-33	5.6-7.8	0.0-0.5	10-34	0-45
	33-80	7.4-8.4	0.0-0.5	0.0-3.0	5-45
FhC2:					
Fox-------------	0-8	5.1-7.3	1.0-3.0	4.0-20	0
	8-30	5.6-7.8	0.0-0.5	10-34	0-45
	30-80	7.4-8.4	0.0-0.5	0.0-3.0	5-45
FhD2:					
Fox-------------	0-5	5.1-7.3	1.0-3.0	4.0-20	0
	5-9	5.6-7.8	0.0-0.5	4.0-30	0
	9-33	5.6-7.8	0.0-0.5	4.0-30	0-45
	33-80	7.4-8.4	0.0-0.5	0.0-3.0	5-45
FmA:					
Fox-------------	0-9	5.1-7.3	1.0-3.0	4.0-20	0
	9-20	5.6-7.8	0.0-0.5	4.0-30	0
	20-34	5.6-7.8	0.0-0.5	4.0-30	0-45
	34-80	7.4-8.4	0.0-0.5	0.0-3.0	5-45
FmB:					
Fox-------------	0-10	5.1-7.3	1.0-3.0	4.0-20	0
	10-26	5.6-7.8	0.0-0.5	4.0-30	0
	26-37	5.6-7.8	0.0-0.5	4.0-30	0-45
	37-80	7.4-8.4	0.0-0.5	0.0-3.0	5-45

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
GaB:					
Gallman---------	0-13	5.6-7.3	1.0-3.0	8.0-20	0
	13-44	4.5-7.3	0.3-1.0	8.0-18	0
	44-71	6.1-7.8	0.1-0.3	7.0-14	5-20
	71-80	6.1-8.4	0.1-0.3	7.0-14	5-20
GcD:					
Germano---------	0-3	4.5-7.3	0.5-3.0	10-15	0
	3-6	4.5-6.5	0.2-1.0	5.0-10	0
	6-28	4.5-6.5	0.2-1.0	5.0-10	0
	28-42	---	---	---	---
	42-44	---	---	---	---
GcE:					
Germano---------	0-6	4.5-7.3	0.5-3.0	10-15	0
	6-20	4.5-6.0	0.2-1.0	5.0-10	0
	20-38	3.5-5.5	0.0-0.0	4.0-6.0	0
	38-48	---	---	---	---
	48-50	---	---	---	---
GdF:					
Germano---------	0-5	4.5-7.3	0.5-3.0	10-15	0
	5-32	4.5-6.0	0.0-0.0	4.0-6.0	0
	32-36	---	---	---	---
	36-40	---	---	---	---
Rock outcrop.					
Gf:					
Gessie----------	0-10	7.4-8.4	1.0-3.0	9.0-22	5-30
	10-42	7.4-8.4	0.5-3.0	8.0-22	5-30
	42-80	7.4-8.4	0.5-1.0	3.0-14	10-30
Gg:					
Gessie----------	0-10	7.4-8.4	1.0-3.0	9.0-22	5-30
	10-50	7.4-8.4	0.5-3.0	8.0-22	5-30
	50-80	7.4-8.4	0.5-1.0	3.0-14	10-30
GkC:					
Gilpin----------	0-8	3.5-5.5	0.5-4.0	7.0-18	0
	8-30	3.5-5.5	0.0-0.5	5.0-12	0
	30-36	3.5-5.5	0.0-0.5	5.0-20	0
	36-39	---	---	---	---
GkD:					
Gilpin----------	0-7	3.6-5.5	0.5-4.0	7.0-18	0
	7-29	3.6-5.5	0.0-0.5	5.0-12	0
	29-31	---	---	---	---
GnB:					
Glenford--------	0-15	4.5-7.3	1.0-3.0	10-18	0
	15-40	5.1-6.0	0.5-1.0	10-24	0
	40-67	4.5-7.3	0.3-0.5	10-24	0
	67-80	4.5-7.8	0.1-0.3	6.0-18	0-5
GnC2:					
Glenford--------	0-5	4.5-7.3	1.0-3.0	10-18	0
	5-9	5.1-6.0	0.5-1.0	10-24	0
	9-49	4.5-7.3	0.3-0.5	10-24	0
	49-80	4.5-7.8	0.1-0.3	6.0-18	0-5

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
HhC2:					
Hickory---------	0-8	4.5-7.3	1.0-2.0	14-19	0
	8-54	4.5-7.3	0.0-0.5	10-24	0
	54-80	5.6-8.4	0.0-0.5	5.0-15	0-25
HkE:					
Hickory---------	0-6	4.5-7.3	1.0-2.0	14-19	0
	6-50	4.5-7.3	0.0-0.5	10-24	0
	50-80	5.6-8.4	0.0-0.5	5.0-15	0-25
Germano---------	0-5	4.5-7.3	0.5-3.0	5.0-10	0
	5-28	4.5-6.0	0.2-1.0	5.0-10	0
	28-40	3.5-5.5	0.0-0.0	4.0-6.0	0
	40-43	---	---	---	---
	43-44	---	---	---	---
HmD2:					
Hickory---------	0-7	4.5-7.3	1.0-2.0	14-19	0
	7-50	4.5-7.3	0.0-0.5	10-24	0
	50-80	5.6-8.4	0.0-0.5	5.0-15	0-25
Gilpin----------	0-8	3.5-5.5	0.5-4.0	7.0-18	0
	8-18	3.5-5.5	0.0-0.5	5.0-12	0
	18-29	3.5-5.5	0.0-0.5	5.0-20	0
	29-32	---	---	---	---
HnC2:					
Homewood--------	0-10	5.1-7.3	1.0-3.0	10-20	0
	10-22	4.5-5.5	0.3-1.0	10-26	0
	22-48	4.5-5.5	0.2-0.5	10-26	0
	48-80	4.5-7.3	0.1-0.3	8.0-18	0
HoD2:					
Homewood--------	0-9	5.1-7.3	1.0-3.0	10-20	0
	9-28	4.5-5.5	0.3-1.0	10-26	0
	28-42	4.5-5.5	0.2-0.5	10-26	0
	42-80	4.5-7.8	0.1-0.3	8.0-18	0
Gilpin----------	0-8	3.5-5.5	0.5-4.0	7.0-18	0
	8-29	3.5-5.5	0.0-0.5	5.0-12	0
	29-32	---	---	---	---
HoE2:					
Homewood--------	0-7	5.1-7.3	1.0-3.0	10-20	0
	7-26	4.5-5.5	0.3-1.0	10-26	0
	26-41	4.5-5.5	0.2-0.5	10-26	0
	41-80	4.5-7.8	0.1-0.3	8.0-18	0
Gilpin----------	0-7	3.5-5.5	0.5-4.0	7.0-18	0
	7-29	3.5-5.5	0.0-0.5	5.0-12	0
	29-32	---	---	---	---
JeB:					
Jeneva----------	0-8	4.5-6.5	1.0-3.0	10-20	0
	8-54	4.5-6.0	1.0-3.0	10-20	0
	54-63	4.5-6.0	0.0-1.0	8.0-18	0
	63-75	4.5-6.5	0.0-0.5	8.0-18	0
	75-93	4.5-6.5	0.0-0.5	8.0-18	0
	93-115	---	---	---	---

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
Km:					
Kokomo----------	0-8	5.1-7.3	3.0-6.0	14-29	0
	8-80	5.6-7.3	1.0-2.0	15-35	0
	80-88	7.4-8.4	0.0-1.0	6.0-17	15-35
Ko:					
Kokomo----------	0-14	5.1-7.3	3.0-6.0	16-33	0
	14-50	5.6-7.3	1.0-2.0	15-35	0
	50-80	7.4-8.4	0.0-1.0	6.0-17	15-35
Lk:					
Lindside--------	0-9	5.1-7.8	2.0-4.0	15-30	0
	9-40	5.1-7.8	0.0-0.5	5.0-20	0
	40-80	5.6-7.8	0.0-0.5	8.0-25	0
LtC2:					
Loudonville-----	0-6	4.5-6.0	1.0-3.0	6.0-22	0
	6-30	4.5-6.0	0.0-0.5	7.0-21	0
	30-35	4.5-6.0	0.0-0.5	7.0-21	0
	35-40	---	---	---	---
Steinsburg------	0-7	3.6-5.5	1.0-3.0	8.0-12	0
	7-16	3.6-5.5	0.0-0.5	5.0-10	0
	16-30	3.6-5.5	0.0-0.5	5.0-10	0
	30-35	---	---	---	---
LtD2:					
Loudonville-----	0-4	4.5-6.0	1.0-3.0	6.0-22	0
	4-24	4.5-6.0	0.0-0.5	7.0-21	0
	24-36	4.5-6.0	0.0-0.5	9.0-23	0
	36-39	---	---	---	---
Steinsburg------	0-7	3.5-5.5	1.0-3.0	8.0-12	0
	7-30	3.5-5.5	0.0-0.5	5.0-10	0
	30-40	3.5-5.5	0.0-0.5	5.0-10	0
	40-45	---	---	---	---
LtE:					
Loudonville-----	0-5	4.5-6.0	1.0-3.0	6.0-22	0
	5-18	4.5-6.0	0.0-0.5	7.0-21	0
	18-37	4.5-6.0	0.0-0.5	9.0-23	0
	37-40	---	---	---	---
Steinsburg------	0-3	3.5-5.5	1.0-3.0	8.0-12	0
	3-30	3.5-5.5	0.0-0.5	5.0-10	0
	30-33	---	---	---	---
LtF:					
Loudonville-----	0-5	4.5-6.0	1.0-3.0	8.0-18	0
	5-16	4.5-6.0	0.3-1.0	8.0-15	0
	16-38	4.5-6.0	0.3-1.0	8.0-15	0
	38-40	---	---	---	---
Steinsburg------	0-4	3.5-5.5	1.0-3.0	8.0-12	0
	4-17	3.5-5.5	0.0-0.5	5.0-10	0
	17-20	---	---	---	---
Ma:					
Marengo---------	0-17	5.6-7.3	4.0-8.0	20-35	0
	17-68	5.6-7.8	0.5-1.0	10-26	0
	68-80	7.4-8.4	0.1-0.3	12-20	0-10

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
Mb:					
Marengo---------	0-18	5.6-7.3	4.0-8.0	16-30	0
	18-80	5.6-7.8	0.5-1.0	10-26	0
McB:					
McGary----------	0-7	5.6-7.3	1.0-3.0	5.0-14	0
	7-30	4.5-7.8	0.0-1.0	10-24	0-15
	30-80	6.6-8.4	0.0-0.5	10-18	10-40
Me:					
Medway----------	0-15	6.1-7.8	3.0-6.0	13-28	0
	15-40	6.1-8.4	0.5-1.0	10-24	0
	40-80	6.1-8.4	0.3-0.5	2.0-18	0-20
MkB2:					
Miamian---------	0-9	5.6-7.3	1.0-3.0	10-18	0
	9-32	4.5-7.3	0.3-1.0	17-28	0-15
	32-80	7.4-8.4	0.1-0.5	7.0-16	25-45
MkC2:					
Miamian---------	0-7	5.6-7.3	1.0-3.0	10-18	0
	7-28	4.5-7.3	0.5-1.0	12-22	0
	28-80	7.4-8.4	0.3-1.0	17-28	0-15
MmC3:					
Miamian---------	0-5	5.6-7.3	0.5-2.0	14-20	0
	5-25	4.5-7.3	0.3-1.0	17-28	0-15
	25-80	7.4-8.4	0.1-0.5	7.0-16	25-45
Thrifton--------	0-8	7.4-8.4	1.0-3.0	14-20	0-10
	8-14	7.4-8.4	0.1-1.0	12-22	0-35
	14-80	7.4-8.4	0.0-0.5	7.0-16	25-45
MmD3:					
Miamian---------	0-3	5.6-7.3	0.5-2.0	14-20	0
	3-27	4.5-7.3	0.3-1.0	17-28	0-15
	27-80	7.4-8.4	0.1-0.5	7.0-16	25-45
Thrifton--------	0-4	7.4-8.4	1.0-3.0	14-20	0-10
	4-18	7.4-8.4	0.1-1.0	12-22	0-35
	18-80	7.4-8.4	0.0-0.5	7.0-16	25-45
Mo:					
Montgomery------	0-10	6.1-7.3	2.0-5.0	20-36	0
	10-57	6.1-7.8	0.0-1.0	20-32	0-5
	57-80	7.4-8.4	0.0-1.0	18-30	20-35
Mr:					
Muskego---------	0-5	5.6-7.3	60-90	140-180	0
	5-27	5.6-8.4	60-90	150-190	0
	27-80	5.6-8.4	6.0-20	10-45	60-80
NaD2:					
Negley----------	0-6	4.5-7.3	1.0-3.0	6.0-22	0
	6-70	4.5-6.0	0.0-0.5	9.0-23	0
	70-80	7.4-8.4	0.0-0.5	9.0-23	0
NaE:					
Negley----------	0-5	4.5-7.3	1.0-3.0	6.0-22	0
	5-67	4.5-6.0	0.0-0.5	7.0-21	0
	67-92	4.5-6.0	0.0-0.5	9.0-23	0
	92-101	7.4-8.4	0.0-0.5	1.0-18	0

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
Ne:					
Newark----------	0-11	5.6-7.8	1.0-4.0	5.0-14	0
	11-50	5.6-7.8	0.0-0.5	5.0-18	0
	50-80	5.6-7.8	0.0-0.5	5.0-10	0
OcA:					
Ockley----------	0-10	5.6-7.3	1.0-3.0	3.0-15	0
	10-16	4.5-6.5	0.5-1.0	10-20	0
	16-50	4.5-7.3	0.5-1.0	2.0-15	0
	50-80	7.4-8.4	0.0-0.5	1.0-3.0	20-50
OcB:					
Ockley----------	0-10	5.6-7.3	1.0-3.0	3.0-15	0
	10-35	4.5-6.5	0.5-1.0	10-20	0
	35-50	4.5-7.3	0.5-1.0	2.0-15	0
	50-80	7.4-8.4	0.0-0.5	1.0-3.0	20-50
Pa:					
Patton----------	0-15	6.6-7.3	3.0-5.0	22-31	0
	15-48	6.1-7.8	1.0-3.0	16-25	0
	48-80	6.6-8.4	0.5-1.0	13-22	0-25
Pb:					
Patton----------	0-18	6.6-7.3	3.0-5.0	22-31	0
	18-56	6.1-7.8	0.0-2.0	16-25	0
	56-80	6.6-8.4	0.0-1.0	13-22	0-25
Pe:					
Pewamo----------	0-18	6.1-7.3	3.0-5.0	10-25	0
	18-60	5.6-7.8	0.5-2.0	10-26	0-5
	60-80	7.4-8.4	0.0-1.0	5.0-15	15-30
Ph.					
Pits					
PkB:					
Pike------------	0-13	4.5-7.3	1.0-3.0	6.0-15	0
	13-45	4.5-5.5	0.0-0.5	8.0-15	0
	45-80	4.5-5.5	0.0-0.5	6.0-10	0
	80-120	4.5-5.5	0.0-0.5	6.0-10	0
PkC2:					
Pike------------	0-7	4.5-7.3	1.0-3.0	6.0-15	0
	7-50	4.5-5.5	0.0-0.5	8.0-15	0
	50-68	4.5-5.5	0.0-0.5	6.0-10	0
	68-80	4.5-5.5	0.0-0.5	6.0-10	0
Ro:					
Rockmill--------	0-13	5.1-7.8	4.0-12	15-25	0
	13-18	5.1-7.8	0.0-2.0	20-50	0
	18-80	5.1-7.8	30-90	50-200	0-20
Rp:					
Rockmill--------	0-10	5.1-7.8	4.0-12	15-25	0
	10-22	5.1-7.8	0.0-2.0	20-50	0
	22-80	5.1-7.8	30-90	50-200	0-20
Rt:					
Rossburg--------	0-22	6.1-7.8	4.0-8.0	9.0-24	0
	22-55	6.1-7.8	0.5-2.0	10-20	0-10
	55-80	6.6-8.4	0.1-0.5	2.0-9.0	10-30

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
Sc:					
Sebring---------	0-9	4.5-7.3	3.0-5.0	15-27	0
	9-38	4.5-6.5	0.3-0.5	12-22	0
	38-53	5.1-7.3	0.1-0.3	10-20	0-5
	53-80	6.1-8.4	0.1-0.3	10-20	0-5
SdD:					
Shelocta--------	0-3	4.5-5.5	0.5-5.0	5.0-16	0
	3-65	4.5-5.5	0.5-2.0	5.0-20	0
	65-70	4.5-5.5	0.0-0.5	5.0-20	0
	70-80	---	---	---	---
SeE:					
Shelocta--------	0-8	4.5-5.5	0.5-5.0	5.0-16	0
	8-56	4.5-5.5	0.5-2.0	5.0-20	0
	56-80	4.5-5.5	0.0-0.5	5.0-20	0
Berks-----------	0-2	3.6-6.5	2.0-4.0	5.0-15	0
	2-24	3.6-6.5	0.0-0.5	5.0-10	0
	24-27	---	---	---	---
	27-28	---	---	---	---
SfD:					
Shelocta--------	0-7	4.5-5.5	0.5-5.0	5.0-16	0
	7-64	4.5-5.5	0.5-2.0	5.0-20	0
	64-95	4.5-5.5	0.0-0.5	5.0-20	0
	95-100	---	---	---	---
Cruze-----------	0-9	3.5-6.0	1.0-3.0	8.0-22	0
	9-13	3.5-5.5	0.3-1.0	5.0-15	0
	13-45	3.5-5.5	0.1-0.5	10-24	0
	45-53	3.5-5.5	0.1-0.3	10-24	0
	53-63	---	---	---	---
SfE:					
Shelocta--------	0-7	4.5-5.5	0.5-5.0	5.0-16	0
	7-64	4.5-5.5	0.5-2.0	5.0-20	0
	64-95	4.5-5.5	0.0-0.5	5.0-20	0
	95-100	---	---	---	---
Cruze-----------	0-9	3.5-6.0	1.0-3.0	8.0-22	0
	9-17	3.5-5.5	0.3-1.0	5.0-15	0
	17-45	3.5-5.5	0.1-0.5	10-24	0
	45-53	3.5-5.5	0.1-0.3	10-24	0
	53-80	---	---	---	---
Sh:					
Shoals----------	0-8	6.6-7.8	2.0-4.0	12-27	0-5
	8-48	6.6-8.4	0.5-2.0	8.0-24	0-10
	48-80	6.6-8.4	0.5-2.0	3.0-19	0-25
SkA:					
Sleeth----------	0-8	5.6-7.3	0.5-3.0	5.0-19	0
	8-25	5.1-7.3	0.5-1.0	9.0-23	0
	25-54	5.6-7.8	0.0-0.5	7.0-22	0-20
	54-80	7.4-8.4	0.0-0.5	0.0-5.0	20-55
St:					
Stonelick-------	0-12	7.4-8.4	0.5-2.0	4.0-15	2-15
	12-80	7.4-8.4	0.3-1.0	2.0-11	10-40

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
TaC2:					
Tarlton---------	0-6	5.1-7.3	1.0-3.0	15-25	0
	6-21	5.1-6.5	0.3-1.0	12-25	0
	21-34	5.6-8.4	0.1-0.3	16-30	0-20
	34-39	---	---	---	---
	39-42	---	---	---	---
ThA:					
Thackery--------	0-8	5.6-7.3	1.0-3.0	8.0-21	0
	8-40	5.1-6.5	0.5-1.0	8.0-20	0
	40-64	5.1-7.8	0.3-0.5	10-21	0
	64-80	6.1-7.8	0.1-0.3	1.0-6.0	30-55
ThB:					
Thackery--------	0-12	5.6-7.3	1.0-3.0	8.0-21	0
	12-17	5.1-6.5	0.5-1.0	8.0-20	0
	17-30	5.1-7.8	0.3-0.5	10-21	0
	30-54	6.1-7.8	0.1-0.3	1.0-6.0	30-55
	54-80	6.1-7.8	0.1-0.3	1.0-6.0	30-55
Ud, Uf, Ug.					
Udorthents					
Um:					
Urban land.					
Aetna-----------	0-20	6.1-7.3	2.0-4.0	10-24	0
	20-80	6.1-7.8	0.5-1.0	10-22	0-5
UoC:					
Urban land.					
Amanda----------	0-7	5.1-7.3	1.0-3.0	10-20	0
	7-20	4.5-5.5	0.3-1.0	10-20	0
	20-40	5.6-7.8	0.1-0.5	10-20	0
	40-80	7.4-8.4	0.1-0.3	6.0-16	0-22
UrB:					
Urban land.					
Bennington------	0-8	4.5-7.3	2.0-4.0	12-20	0
	8-36	5.6-8.4	0.5-1.0	20-26	0
	36-80	7.4-8.4	0.1-0.3	9.0-20	10-20
UtC:					
Urban land.					
Cardington------	0-10	4.5-7.3	0.5-2.0	12-24	0
	10-30	4.5-7.8	0.5-1.0	18-24	0
	30-80	7.4-8.4	0.1-0.3	9.0-20	8-22
UuB:					
Urban land.					
Celina----------	0-8	5.6-7.3	1.0-3.0	9.0-19	0
	8-28	4.5-7.8	0.5-1.0	18-32	0-15
	28-80	7.4-8.4	0.3-0.5	8.0-14	25-45
UxB:					
Urban land.					

Table 24.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
UxB:					
Ockley----------	0-11	5.6-7.3	1.0-3.0	3.0-15	0
	11-23	4.5-6.5	0.5-1.0	10-20	0
	23-44	4.5-7.3	0.5-1.0	2.0-15	0
	44-80	7.4-8.4	0.0-0.5	1.0-3.0	20-50
Uy:					
Urban land.					
Udorthents.					
WdA:					
Wea-------------	0-8	5.6-7.3	2.0-5.0	8.0-24	0
	8-38	5.1-6.5	0.5-2.0	5.0-20	0
	38-55	5.6-7.3	0.0-1.0	7.0-20	0
	55-80	7.4-8.4	0.0-1.0	0.0-5.0	20-55
WeC:					
Wellston--------	0-7	3.5-5.6	1.0-3.0	8.0-16	0
	7-48	4.5-6.0	0.3-1.0	5.0-20	0
	48-72	---	---	---	---
WfC:					
Wellston--------	0-8	3.5-5.6	1.0-3.0	6.0-14	0
	8-39	4.5-6.0	0.3-1.0	5.0-20	0
	39-55	4.5-6.0	0.1-0.3	5.0-15	0
	55-58	---	---	---	---
Cruze-----------	0-6	3.6-6.0	1.0-3.0	8.0-22	0
	6-15	3.6-5.5	0.3-1.0	8.0-21	0
	15-37	3.6-5.5	0.1-0.5	14-33	0
	37-45	3.6-5.5	0.1-0.3	16-36	0
	45-50	---	---	---	---
Wg:					
Westland--------	0-10	6.1-7.3	2.0-5.0	10-26	0
	10-54	6.1-7.3	0.5-2.0	9.0-22	0
	54-80	6.6-7.8	0.5-2.0	3.0-15	0-25
	80-86	7.4-8.4	0.0-0.5	0.0-2.0	25-45
Wk:					
Westland--------	0-12	6.1-7.3	2.0-5.0	15-31	0
	12-34	6.1-7.3	0.5-2.0	9.0-22	0
	34-60	6.6-7.8	0.5-2.0	3.0-15	0-25
	60-80	7.4-8.4	0.0-0.5	0.0-2.0	25-45
ZnB:					
Zanesville------	0-7	4.5-6.0	1.0-2.0	6.0-21	0
	7-34	4.5-6.0	0.5-2.0	5.0-20	0
	34-55	4.5-6.0	0.0-1.0	5.0-20	0
	55-75	4.5-6.0	0.0-0.5	10-18	0
	75-78	---	---	---	---
ZnC2:					
Zanesville------	0-6	4.5-6.0	1.0-2.0	6.0-21	0
	6-24	4.5-6.0	0.5-2.0	5.0-20	0
	24-48	4.5-6.0	0.0-1.0	5.0-20	0
	48-52	4.5-6.0	0.0-0.5	10-18	0
	52-55	---	---	---	---

Table 25.--Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
AfB:										
Alford----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
AfC2:										
Alford----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Ag:										
Aetna-----------	C	Jan-Jun	1.0-2.0	>6.0	Apparent	---	---	None	Very brief	Occasional
		Jul-Nov	---	---	---	---	---	None	---	None
		Dec	---	---	---	---	---	None	Very brief	Occasional
Ah:										
Aetna-----------	C	Jan-Jun	1.0-2.0	>6.0	Apparent	---	---	None	Very brief	Occasional
		Jul-Nov	---	---	---	---	---	None	---	None
		Dec	---	---	---	---	---	None	Very brief	Occasional
AmB:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
AmB2:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
AmC2:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
AmD2:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
AmE2:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
AoC3:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
AoD3:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
ApB2:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
Loudonville-----	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
ApC2:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
Loudonville-----	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
ApD2:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
Loudonville-----	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
ArC2:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
Ockley----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
ArD2:										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
Ockley----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Bb:										
Beaucoup--------	B	Jan-Feb	---	---	---	---	---	None	---	None
		Mar-Jun	0.0-0.5	>6.0	Apparent	0.0-0.5	Long	Frequent	Long	Occasional
		Jul-Dec	---	---	---	---	---	None	---	None
BeA:										
Bennington------	C	Jan-May	0.5-1.5	1.0-3.0	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.5	1.0-3.0	Perched	---	---	None	---	None
BeB:										
Bennington------	C	Jan-May	0.5-1.5	1.0-3.0	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.5	1.0-3.0	Perched	---	---	None	---	None
BkF:										
Berks-----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
CaB:										
Cardington------	C	Jan-Apr	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None
CaB2:										
Cardington------	C	Jan-Apr	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None
CaC2:										
Cardington------	C	Jan-Apr	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
CaD2:										
Cardington------	C	Jan-Apr	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None
Cb:										
Carlisle--------	A	Jan-Jun	0	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
		Jul-Aug	---	---	---	---	---	None	---	None
		Sep-Dec	0	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
CdF:										
Cedarfalls------	A	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Rock outcrop.										
CeB:										
Celina----------	C	Jan-Apr	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
CfB:										
Centerburg------	C	Jan-Apr	1.0-2.0	1.6-3.5	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	1.6-3.5	Perched	---	---	None	---	None
CfB2:										
Centerburg------	C	Jan-Apr	1.0-2.0	1.6-3.5	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	1.6-3.5	Perched	---	---	None	---	None
CfC2:										
Centerburg------	C	Jan-Apr	1.0-2.0	1.6-3.5	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	1.6-3.5	Perched	---	---	None	---	None
Cg:										
Chagrin---------	B	Jan	---	---	---	---	---	None	Brief	Frequent
		Feb-Mar	4.0-6.0	>6.0	Apparent	---	---	None	Brief	Frequent
		Apr-May	---	---	---	---	---	None	Brief	Frequent
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	---	---	---	---	---	None	Brief	Frequent
CkC2:										
Cincinnati------	C	Jan-Apr	2.0-3.0	2.5-4.0	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
CmC2:										
Cincinnati------	C	Jan-Apr	2.0-3.0	2.5-4.0	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
Wellston--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Cn:										
Condit----------	D	Jan-Jul	0	0.0-1.0	Perched	0.0-1.0	Long	Occasional	---	None
		Aug-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0	0.0-1.0	Perched	0.0-1.0	Long	Occasional	---	None
CoB:										
Corwin----------	B	Jan-Apr	1.5-2.5	2.0-3.5	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	1.5-2.5	2.0-3.5	Perched	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
CrA:										
Crosby----------	C	Jan-Apr	0.5-1.5	1.0-3.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	0.5-1.5	1.0-3.0	Perched	---	---	None	---	None
CsA:										
Canal-----------	C	Jan-May	0.5-1.5	4.0-6.0	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.5	4.0-6.0	Perched	---	---	None	---	None
Ee:										
Eel-------------	B	Jan-Apr	1.5-2.0	>6.0	Apparent	---	---	None	Brief	Occasional
		May-Jun	---	---	---	---	---	None	Brief	Occasional
		Jul-Nov	---	---	---	---	---	None	---	None
		Dec	1.5-2.0	>6.0	Apparent	---	---	None	Brief	Occasional
EkA:										
Eldean----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
EkB:										
Eldean----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
EnC2:										
Eldean----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Eu:										
Euclid----------	C	Jan-Jun	1.0-2.5	>6.0	Apparent	---	---	None	---	Rare
		Jul-Oct	---	---	---	---	---	None	---	Rare
		Nov-Dec	1.0-2.5	>6.0	Apparent	---	---	None	---	Rare
FbA:										
Fitchville------	C	Jan-May	0.5-1.0	>6.0	Apparent	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.0	>6.0	Apparent	---	---	None	---	None
FhA:										
Fox-------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FhB:										
Fox-------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FhC2:										
Fox-------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FhD2:										
Fox-------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FmA:										
Fox-------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FmB:										
Fox-------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
GaB:										
Gallman---------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
GcD:										
Germano---------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
GcE:										
Germano---------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
GdF:										
Germano---------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Rock outcrop.										
Gf:										
Gessie----------	B	Jan-May	>6.0	>6.0	---	---	---	None	Brief	Occasional
		Jun-Sep	>6.0	>6.0	---	---	---	None	---	None
		Oct-Dec	>6.0	>6.0	---	---	---	None	Brief	Occasional
Gg:										
Gessie----------	B	Jan-May	>6.0	>6.0	---	---	---	None	Brief	Frequent
		Jun-Sep	>6.0	>6.0	---	---	---	None	---	None
		Oct-Dec	>6.0	>6.0	---	---	---	None	Brief	Frequent
GkC:										
Gilpin----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
GkD:										
Gilpin----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
GnB:										
Glenford--------	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	>6.0	Apparent	---	---	None	---	None
GnC2:										
Glenford--------	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	>6.0	Apparent	---	---	None	---	None
HhC2:										
Hickory---------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
HkE:										
Hickory---------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Germano---------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
HmD2:										
Hickory---------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Gilpin----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
HnC2:										
Homewood--------	C	Jan-Apr	1.5-3.0	2.0-5.0	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-3.0	2.0-5.0	Perched	---	---	None	---	None
HoD2:										
Homewood--------	C	Jan-Apr	1.5-3.0	2.0-5.0	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-3.0	2.0-5.0	Perched	---	---	None	---	None
Gilpin----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
HoE2:										
Homewood--------	C	Jan-Apr	1.5-3.0	2.0-5.0	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-3.0	2.0-5.0	Perched	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
HoE2:										
Gilpin----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
JeB:										
Jeneva----------	B	Jan-Apr	2.0-3.5	5.0-6.0	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
Km:										
Kokomo----------	B	Jan-May	0	>6.0	Apparent	0.0-2.0	Long	Frequent	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0	>6.0	Apparent	0.0-2.0	Long	Frequent	---	None
Ko:										
Kokomo----------	B	Jan-May	0	>6.0	Apparent	0.0-2.0	Long	Frequent	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0	>6.0	Apparent	0.0-2.0	Long	Frequent	---	None
Lk:										
Lindside--------	C	Jan-Apr	1.5-3.0	>6.0	Apparent	---	---	None	Brief	Occasional
		May-Nov	---	---	---	---	---	None	---	None
		Dec	1.5-3.0	>6.0	Apparent	---	---	None	Brief	Occasional
LtC2:										
Loudonville-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Steinsburg------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
LtD2:										
Loudonville-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Steinsburg------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
LtE:										
Loudonville-----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Steinsburg------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
LtF:										
Loudonville-----	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Steinsburg------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Ma:										
Marengo---------	C	Jan-Jun	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Jul-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
Mb:										
Marengo---------	C	Jan-Jun	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Jul-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
McB:										
McGary----------	C	Jan-Apr	0.5-1.5	1.0-3.5	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	0.5-1.5	1.0-3.5	Perched	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
Me:										
Medway----------	B	Jan-Apr	1.5-3.0	>6.0	Apparent	---	---	None	Long	Occasional
		May-Jun	---	---	---	---	---	None	Long	Occasional
		Jul-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	---	---	---	---	---	None	Long	Occasional
MkB2:										
Miamian---------	C	Jan-Apr	2.5-3.5	3.0-4.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	2.5-3.5	3.0-4.0	Perched	---	---	None	---	None
MkC2:										
Miamian---------	C	Jan-Apr	2.5-3.5	3.0-4.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	2.5-3.5	3.0-4.0	Perched	---	---	None	---	None
MmC3:										
Miamian---------	C	Jan-Apr	2.5-3.5	3.0-4.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	2.5-3.5	3.0-4.0	Perched	---	---	None	---	None
Thrifton--------	C	Jan-Apr	1.5-3.5	2.5-4.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	1.5-3.5	2.5-4.0	Perched	---	---	None	---	None
MmD3:										
Miamian---------	C	Jan-Apr	2.5-3.5	3.0-4.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	2.5-3.5	3.0-4.0	Perched	---	---	None	---	None
Thrifton--------	C	Jan-Apr	1.5-3.5	2.5-4.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	1.5-3.5	2.5-4.0	Perched	---	---	None	---	None
Mo:										
Montgomery------	D	Jan-May	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
Mr:										
Muskego---------	A	Jan-Aug	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Sep-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
NaD2:										
Negley----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
NaE:										
Negley----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Ne:										
Newark----------	C	Jan-Apr	0.5-1.5	>6.0	Apparent	---	---	None	Brief	Occasional
		May	0.5-1.5	>6.0	Apparent	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0.5-1.5	>6.0	Apparent	---	---	None	---	None
OcA:										
Ockley----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
OcB:										
Ockley----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
Pa:										
Patton----------	B	Jan-Feb	---	---	---	---	---	None	---	None
		Mar-Jun	0	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
		Jul-Dec	---	---	---	---	---	None	---	None
Pb:										
Patton----------	B	Jan-Feb	---	---	---	---	---	None	Very brief	Rare
		Mar-Jun	0.0-0.5	>6.0	Apparent	0.0-0.5	Long	Frequent	Very brief	Rare
		Jul-Dec	---	---	---	---	---	None	Very brief	Rare
Pe:										
Pewamo----------	C	Jan-May	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
Ph.										
Pits										
PkB:										
Pike------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
PkC2:										
Pike------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Ro:										
Rockmill--------	C	Jan-Jun	0	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
		Jul-Aug	---	---	---	---	---	None	---	None
		Sep-Dec	0	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
Rp:										
Rockmill--------	C	Jan-Jun	0	>6.0	Apparent	0.0-0.5	Long	Frequent	Brief	Occasional
		Jul-Aug	---	---	---	---	---	None	---	None
		Sep-Dec	0	>6.0	Apparent	0.0-0.5	Long	Frequent	Brief	Occasional
Rt:										
Rossburg--------	B	Jan-Jun	>6.0	>6.0	---	---	---	None	Very brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	None	Very brief	Occasional
Sc:										
Sebring---------	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	Very brief	Rare
		Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Jul-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.0-1.0	Long	Frequent	Very brief	Rare
SdD:										
Shelocta--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
SeE:										
Shelocta--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Berks-----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
SfD:										
Shelocta--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Cruze-----------	C	Jan-Apr	1.5-3.0	3.0-6.0	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
SfE:										
Shelocta--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Cruze-----------	C	Jan-Apr	1.5-3.0	3.0-6.0	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
Sh:										
Shoals----------	C	Jan-Apr	0.5-1.5	>6.0	Apparent	---	---	None	Brief	Occasional
		May-Jun	---	---	---	---	---	None	Brief	Occasional
		Jul-Sep	---	---	---	---	---	None	---	None
		Oct-Dec	---	---	---	---	---	None	Brief	Occasional
SkA:										
Sleeth----------	B	Jan-Apr	0.5-1.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
St:										
Stonelick-------	B	Jan-Jun	>6.0	>6.0	---	---	---	None	Very brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	None	Very brief	Occasional
TaC2:										
Tarlton---------	C	Jan-Apr	1.5-3.0	2.0-3.5	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
ThA:										
Thackery--------	B	Jan-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
ThB:										
Thackery--------	B	Jan-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
Ud, Uf, Ug.										
Udorthents										
Um:										
Urban land.										
Aetna-----------	C	Jan-Jun	1.0-2.0	>6.0	Apparent	---	---	None	Very brief	Rare
		Jul-Nov	---	---	---	---	---	None	---	None
		Dec	---	---	---	---	---	None	Very brief	Rare
UoC:										
Urban land.										
Amanda----------	C	Jan-May	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	3.5-5.0	4.0-7.0	Perched	---	---	None	---	None
UrB:										
Urban land.										
Bennington------	C	Jan-May	0.5-1.5	1.0-3.0	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.5	1.0-3.0	Perched	---	---	None	---	None

Table 25.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
UtC:										
Urban land.										
Cardington------	C	Jan-Apr	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None
UuB:										
Urban land.										
Celina----------	C	Jan-Apr	1.5-3.0	1.6-3.5	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
UxB:										
Urban land.										
Ockley----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Uy:										
Urban land.										
Udorthents.										
WdA:										
Wea-------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
WeC:										
Wellston--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
WfC:										
Wellston--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Cruze-----------	C	Jan-Apr	1.5-3.0	3.0-6.0	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
Wg:										
Westland--------	B	Jan-May	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
Wk:										
Westland--------	B	Jan-May	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
ZnB:										
Zanesville------	C	Jan-Apr	2.0-3.0	3.0-5.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	2.0-3.0	3.0-5.0	Perched	---	---	None	---	None
ZnC2:										
Zanesville------	C	Jan-Apr	2.0-3.0	3.0-5.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	2.0-3.0	3.0-5.0	Perched	---	---	None	---	None

Table 26.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Subsidence	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In		In			
AfB:							
Alford	---	>80	---	---	High	Moderate	High.
AfC2:							
Alford	---	>80	---	---	High	Moderate	High.
Ag:							
Aetna	---	>80	---	---	High	High	Low.
Ah:							
Aetna	---	>80	---	---	High	High	Low.
AmB:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
AmB2:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
AmC2:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
AmD2:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
AmE2:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
AoC3:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
AoD3:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
ApB2:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
Loudonville	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate	Moderate	High.
ApC2:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
Loudonville	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate	Moderate	High.
ApD2:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
Loudonville	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate	Moderate	High.
ArC2:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
Ockley	Strongly contrasting textural stratification	40-72	---	---	Moderate	Moderate	Moderate.

Table 26.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence	Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness			Uncoated steel	Concrete
		In		In			
ArD2:							
Amanda	---	>80	---	---	Moderate	Moderate	Moderate.
Ockley	Strongly contrasting textural stratification	33-72	---	---	Moderate	Moderate	Moderate.
Bb:							
Beaucoup	---	>80	---	---	High	High	Low.
BeA:							
Bennington	---	>80	---	---	High	High	Moderate.
BeB:							
Bennington	---	>80	---	---	High	High	Moderate.
BkF:							
Berks	Bedrock (paralithic)	18-38	Weakly cemented	---	Low	Low	High.
	Bedrock (lithic)	20-40	Strongly cemented				
CaB:							
Cardington	---	>80	---	---	High	High	Moderate.
CaB2:							
Cardington	---	>80	---	---	High	High	Moderate.
CaC2:							
Cardington	---	>80	---	---	High	High	Moderate.
CaD2:							
Cardington	---	>80	---	---	High	High	Moderate.
Cb:							
Carlisle	---	>80	---	43-54	High	High	Low.
CdF:							
Cedarfalls	Bedrock (lithic)	40-60	Strongly cemented	---	Low	Low	High.
Rock outcrop.							
CeB:							
Celina	Dense material	20-40	---	---	High	High	Moderate.
CfB:							
Centerburg	---	>80	---	---	High	High	Moderate.
CfB2:							
Centerburg	---	>80	---	---	High	High	Moderate.
CfC2:							
Centerburg	---	>80	---	---	High	High	Moderate.
Cg:							
Chagrin	---	>80	---	---	Moderate	Low	Moderate.
CkC2:							
Cincinnati	Fragipan	22-36	---	---	High	Moderate	High.

Table 26.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence	Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness			Uncoated steel	Concrete
		In		In			
CmC2:							
Cincinnati	Fragipan	22-36	---	---	High	Moderate	High.
Wellston	Bedrock (lithic)	40-72	Strongly cemented	---	High	Moderate	High.
Cn:							
Condit	---	>80	---	---	High	High	Moderate.
CoB:							
Corwin	Dense material	24-40	---	---	Moderate	High	Moderate.
CrA:							
Crosby	Dense material	20-40	---	---	High	High	Moderate.
CsA:							
Canal	---	>80	---	---	High	High	Moderate.
Ee:							
Eel	---	>80	---	---	High	Moderate	Low.
EkA:							
Eldean	Strongly contrasting textural stratification	20-40	---	---	Moderate	High	Moderate.
EkB:							
Eldean	Strongly contrasting textural stratification	20-40	---	---	Moderate	High	Moderate.
EnC2:							
Eldean	Strongly contrasting textural stratification	20-40	---	---	Moderate	High	Moderate.
Eu:							
Euclid	---	>80	---	---	High	High	High.
FbA:							
Fitchville	---	>80	---	---	High	High	Moderate.
FhA:							
Fox	Strongly contrasting textural stratification	20-40	---	---	Moderate	Moderate	Moderate.
FhB:							
Fox	Strongly contrasting textural stratification	20-40	---	---	Moderate	Moderate	Moderate.
FhC2:							
Fox	Strongly contrasting textural stratification	20-40	---	---	Moderate	Moderate	Moderate.

Table 26.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence	Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness			Uncoated steel	Concrete
		In		In			
FhD2:							
Fox	Strongly contrasting textural stratification	20-40	---	---	Moderate	Moderate	Moderate.
FmA:							
Fox	Strongly contrasting textural stratification	20-40	---	---	Moderate	Moderate	Moderate.
FmB:							
Fox	Strongly contrasting textural stratification	20-40	---	---	Moderate	Moderate	Moderate.
GaB:							
Gallman	---	>80	---	---	Moderate	Moderate	Moderate.
GcD:							
Germano	Bedrock (paralithic)	18-38	Weakly cemented	---	Moderate	Low	High.
	Bedrock (lithic)	20-43	Strongly cemented				
GcE:							
Germano	Bedrock (paralithic)	18-39	Weakly cemented	---	Moderate	Low	High.
	Bedrock (lithic)	20-49	Strongly cemented				
GdF:							
Germano	Bedrock (paralithic)	18-38	Weakly cemented	---	Moderate	Low	High.
	Bedrock (lithic)	20-40	Strongly cemented				
Rock outcrop.							
Gf:							
Gessie	---	>80	---	---	Moderate	Low	Low.
Gg:							
Gessie	---	>80	---	---	Moderate	Low	Low.
GkC:							
Gilpin	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate	Low	High.
GkD:							
Gilpin	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate	Low	High.
GnB:							
Glenford	---	>80	---	---	High	Moderate	Moderate.
GnC2:							
Glenford	---	>80	---	---	High	Moderate	Moderate.
HhC2:							
Hickory	---	>80	---	---	Moderate	Moderate	Moderate.

Table 26.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Sub-sidence	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In		In			
HkE:							
Hickory------------	---	>80	---	---	Moderate----	Moderate----	Moderate.
Germano------------	Bedrock (paralithic)	18-41	Weakly cemented	---	Moderate----	Low---------	High.
	Bedrock (lithic)	20-44	Strongly cemented				
HmD2:							
Hickory------------	---	>80	---	---	Moderate----	Moderate----	Moderate.
Gilpin-------------	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate----	Low---------	High.
HnC2:							
Homewood-----------	Fragipan	16-33	---	---	Moderate----	Low---------	Moderate.
HoD2:							
Homewood-----------	Fragipan	16-33	---	---	Moderate----	Low---------	Moderate.
Gilpin-------------	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate----	Low---------	High.
HoE2:							
Homewood-----------	Fragipan	16-33	---	---	Moderate----	Low---------	Moderate.
Gilpin-------------	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate----	Low---------	High.
JeB:							
Jeneva-------------	---	>80	---	---	High--------	Moderate----	High.
Km:							
Kokomo-------------	---	>80	---	---	High--------	High--------	Moderate.
Ko:							
Kokomo-------------	---	>80	---	---	High--------	High--------	Moderate.
Lk:							
Lindside-----------	---	>80	---	---	High--------	Moderate----	Low.
LtC2:							
Loudonville--------	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate----	Low---------	High.
Steinsburg---------	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate----	Low---------	High.
LtD2:							
Loudonville--------	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate----	Low---------	High.
Steinsburg---------	Bedrock (lithic)	20-43	Strongly cemented	---	Moderate----	Low---------	High.
LtE:							
Loudonville--------	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate----	Low---------	High.
Steinsburg---------	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate----	Low---------	High.
LtF:							
Loudonville--------	Bedrock (lithic)	20-40	Strongly cemented	---	Moderate----	Moderate----	High.
Steinsburg---------	Bedrock (lithic)	16-40	Strongly cemented	---	Moderate----	Low---------	High.
Ma:							
Marengo------------	---	>80	---	---	High--------	High--------	Moderate.

Table 26.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Subsidence	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In		In			
Mb:							
Marengo	---	>80	---	---	High	High	Moderate.
McB:							
McGary	---	>80	---	---	High	High	Low.
Me:							
Medway	---	>80	---	---	High	High	Low.
MkB2:							
Miamian	Dense material	20-40	---	---	Moderate	Moderate	Moderate.
MkC2:							
Miamian	Dense material	20-40	---	---	Moderate	Moderate	Moderate.
MmC3:							
Miamian	Dense material	20-40	---	---	Moderate	Moderate	Moderate.
Thrifton	Dense material	10-20	---	---	Moderate	Low	Low.
MmD3:							
Miamian	Dense material	20-40	---	---	Moderate	Moderate	Moderate.
Thrifton	Dense material	10-20	---	---	Moderate	Low	Low.
Mo:							
Montgomery	---	>80	---	---	High	High	Low.
Mr:							
Muskego	---	>80	---	35-45	High	Moderate	Moderate.
NaD2:							
Negley	---	>80	---	---	Moderate	Low	High.
NaE:							
Negley	---	>80	---	---	Moderate	Low	High.
Ne:							
Newark	---	>80	---	---	High	High	Low.
OcA:							
Ockley	Strongly contrasting textural stratification	40-72	---	---	Moderate	Moderate	Moderate.
OcB:							
Ockley	Strongly contrasting textural stratification	40-72	---	---	Moderate	Moderate	Moderate.
Pa:							
Patton	---	>80	---	---	High	High	Low.
Pb:							
Patton	---	>80	---	---	High	High	Low.
Pe:							
Pewamo	---	>80	---	---	High	High	Low.

Table 26.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence	Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness			Uncoated steel	Concrete
		In		In			
Ph.: Pits							
PkB:							
Pike	---	>80	---	---	High	Moderate	High.
PkC2:							
Pike	---	>80	---	---	High	Moderate	High.
Ro:							
Rockmill	---	>80	---	---	High	Moderate	Moderate.
Rp:							
Rockmill	---	>80	---	---	High	Moderate	Moderate.
Rt:							
Rossburg	---	>80	---	---	Moderate	Low	Low.
Sc:							
Sebring	---	>80	---	---	High	High	Moderate.
SdD:							
Shelocta	Bedrock (lithic)	48-120	Strongly cemented	---	Moderate	Low	High.
SeE:							
Shelocta	Bedrock (lithic)	48-120	Strongly cemented	---	Moderate	Low	High.
Berks	Bedrock (paralithic)	18-38	Weakly cemented	---	Low	Low	High.
	Bedrock (lithic)	20-40	Strongly cemented				
SfD:							
Shelocta	Bedrock (lithic)	48-120	Strongly cemented	---	Moderate	Low	High.
Cruze	Bedrock (paralithic)	48-80	Weakly cemented	---	High	High	High.
SfE:							
Shelocta	Bedrock (lithic)	48-120	Strongly cemented	---	Moderate	Low	High.
Cruze	Bedrock (paralithic)	48-80	Weakly cemented	---	High	High	High.
Sh:							
Shoals	---	>80	---	---	High	High	Low.
SkA:							
Sleeth	---	>80	---	---	High	High	Low.
St:							
Stonelick	---	>80	---	---	Moderate	Low	Low.
TaC2:							
Tarlton	Bedrock (paralithic)	20-40	Weakly cemented	---	High	High	Moderate.
	Bedrock (lithic)	35-42	Strongly cemented				
ThA:							
Thackery	Strongly contrasting textural stratification	40-72	---	---	High	Moderate	Moderate.

Table 26.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Subsidence	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In		In			
ThB:							
Thackery-----------	Strongly contrasting textural stratification	40-72	---	---	High--------	Moderate----	Moderate.
Ud, Uf, Ug. Udorthents							
Um:							
Urban land.							
Aetna--------------	---	>80	---	---	High--------	High--------	Low.
UoC:							
Urban land.							
Amanda-------------	---	>80	---	---	Moderate----	Moderate----	Moderate.
UrB:							
Urban land.							
Bennington---------	---	>80	---	---	High--------	High--------	Moderate.
UtC:							
Urban land.							
Cardington---------	---	>80	---	---	High--------	High--------	Moderate.
UuB:							
Urban land.							
Celina-------------	Dense material	20-40	---	---	High--------	High--------	Moderate.
UxB:							
Urban land.							
Ockley-------------	Strongly contrasting textural stratification	40-72	---	---	Moderate----	Moderate----	Moderate.
Uy:							
Urban land.							
Udorthents.							
WdA:							
Wea----------------	Strongly contrasting textural stratification	40-70	---	---	Moderate----	Low---------	Moderate.
WeC:							
Wellston-----------	Bedrock (lithic)	40-72	Strongly cemented	---	High--------	Moderate----	High.
WfC:							
Wellston-----------	Bedrock (lithic)	40-72	Strongly cemented	---	High--------	Moderate----	High.
Cruze--------------	Bedrock (paralithic)	39-80	Weakly cemented	---	High--------	High--------	High.

Table 26.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence	Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness			Uncoated steel	Concrete
		In		In			
Wg:							
Westland	---	>80	---	---	High	High	Low.
Wk:							
Westland	---	>80	---	---	High	High	Low.
ZnB:							
Zanesville	Fragipan	24-40	---	---	High	Moderate	High.
	Bedrock (paralithic)	40-80	Moderately cemented				
ZnC2:							
Zanesville	Fragipan	24-40	---	---	High	Moderate	High.
	Bedrock (paralithic)	40-80	Moderately cemented				

Table 27.--Classification of the Soils

Soil name	Family or higher taxonomic class
Aetna	Fine-silty, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts
Alford	Fine-silty, mixed, superactive, mesic Ultic Hapludalfs
Amanda	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Beaucoup	Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls
Bennington	Fine, illitic, mesic Aeric Epiaqualfs
Berks	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Canal	Fine-silty, mixed, active, mesic Aeric Epiaqualfs
Cardington	Fine, illitic, mesic Aquic Hapludalfs
Carlisle	Euic, mesic Typic Haplosaprists
Cedarfalls	Sandy, siliceous, mesic Typic Udorthents
Celina	Fine, mixed, active, mesic Aquic Hapludalfs
Centerburg	Fine-loamy, mixed, active, mesic Aquic Hapludalfs
Chagrin	Fine-loamy, mixed, active, mesic Dystric Fluventic Eutrudepts
Cincinnati	Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs
Condit	Fine, illitic, mesic Typic Epiaqualfs
Corwin	Fine-loamy, mixed, active, mesic Oxyaquic Argiudolls
Crosby	Fine, mixed, active, mesic Aeric Epiaqualfs
Cruze	Fine, mixed, semiactive, mesic Aquic Hapludults
Eel	Fine-loamy, mixed, superactive, mesic Fluvaquentic Eutrudepts
Eldean	Fine, mixed, superactive, mesic Typic Hapludalfs
Euclid	Fine-silty, mixed, active, nonacid, mesic Aeric Endoaquepts
Fitchville	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Fox	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs
Gallman	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Germano	Coarse-loamy, mixed, active, mesic Typic Hapludults
Gessie	Fine-loamy, mixed, superactive, mesic Fluventic Eutrudepts
Gilpin	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Glenford	Fine-silty, mixed, superactive, mesic Aquic Hapludalfs
Hickory	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Homewood	Fine-loamy, mixed, superactive, mesic Oxyaquic Fragiudalfs
Jeneva	Fine-silty, mixed, active, mesic Oxyaquic Hapludalfs
Kokomo	Fine, mixed, superactive, mesic Typic Argiaquolls
Lindside	Fine-silty, mixed, active, mesic Fluvaquentic Eutrudepts
Loudonville	Fine-loamy, mixed, active, mesic Ultic Hapludalfs
Marengo	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls
McGary	Fine, mixed, active, mesic Aeric Epiaqualfs
Medway	Fine-loamy, mixed, superactive, mesic Fluvaquentic Hapludolls
Miamian	Fine, mixed, active, mesic Oxyaquic Hapludalfs
Montgomery	Fine, mixed, active, mesic Vertic Endoaquolls
Muskego	Coprogenous, euic, mesic Limnic Haplosaprists
Negley	Fine-loamy, mixed, active, mesic Typic Paleudalfs
Newark	Fine-silty, mixed, active, nonacid, mesic Aeric Fluvaquents
Ockley	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Patton	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Pewamo	Fine, mixed, active, mesic Typic Argiaquolls
Pike	Fine-silty, mixed, active, mesic Ultic Hapludalfs
Rockmill	Fine-silty, mixed, superactive, nonacid, mesic Thapto-Histic Fluvaquents
Rossburg	Fine-loamy, mixed, superactive, mesic Fluventic Hapludolls
Sebring	Fine-silty, mixed, superactive, mesic Typic Endoaqualfs
Shelocta	Fine-loamy, mixed, active, mesic Typic Hapludults
Shoals	Fine-loamy, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts
Sleeth	Fine-loamy, mixed, active, mesic Aeric Endoaqualfs
Steinsburg	Coarse-loamy, mixed, active, mesic Typic Dystrudepts
Stonelick	Coarse-loamy, mixed, superactive, calcareous, mesic Typic Udifluvents
Tarlton	Fine, mixed, active, mesic Aquic Hapludalfs
Thackery	Fine-loamy, mixed, active, mesic Aquic Hapludalfs
Thrifton	Fine-loamy, mixed, superactive, mesic Oxyaquic Hapludalfs
Udorthents	Udorthents
Wea	Fine-loamy, mixed, active, mesic Typic Argiudolls
Wellston	Fine-silty, mixed, active, mesic Ultic Hapludalfs
Westland	Fine-loamy, mixed, superactive, mesic Typic Argiaquolls
Zanesville	Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs

Interpretive Groups

Soils that have similar properties that affect specified land uses and management practices can be grouped for management purposes. The soils in the survey area are assigned to interpretive groups, which are established mainly on the basis of soil properties and other factors that directly influence a specific use of the soil. These interpretive groups allow users of soil surveys to plan reasonable alternatives for the use and management of combinations of soils.

The table in this section lists land capability classification, pasture and hayland suitability groups, prime farmland classification, and hydric classification.

The *land capability classification* system groups soils primarily on the basis of their capability to produce the common cultivated crops and pasture plants without deterioration over a long period of time. The table shows the land capability class and subclass for the map units in Fairfield County. Additional information about the land capability classification system is provided under the heading “Land Capability Classification” in the “Crops and Pasture” section of this survey.

Pasture and hayland suitability groups are made up of map units having similar potentials and limitations for forage production. These groups simplify soils information and provide soil and plant science information for planning purposes. The table shows the pasture and hayland suitability group for each of the soils in Fairfield County. Additional information on pasture and hayland suitability groups is provided in the “Crops and Pasture” section of this survey.

Prime farmland classification identifies the location and extent of the most suitable land for producing food, feed, fiber, forage, and oilseed crops. This identification is useful in the management and maintenance of the resource base that supports the productive capacity of Ohio agriculture. The table shows which of the map units in Fairfield County are prime farmland. Additional information on prime farmland is provided in the “Important Farmlands” section of this survey.

The identification of *hydric soils* and information about hydrophytic vegetation and wetland hydrology are used to define wetlands. The table shows which of the soils in Fairfield County are hydric. Additional information is provided under the heading “Hydric Soils” and in tables 6 and 7.

Interpretive Groups

(Unless otherwise indicated, a complex is treated as a single management unit in the "Land capability classification" column. See text for definitions of the groups. Absence of an entry indicates that the map unit is not suited to the intended use or that no interpretive group is applicable)

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland classification	Hydric classification
AfB	2e		Prime farmland	
Alford		A-6		Not hydric
AfC2	3e		Not prime farmland	
Alford		A-6		Not hydric
Ag	2w		Prime farmland where drained	
Aetna		C-3		Not hydric
Ah	2w		Prime farmland where drained	
Aetna		C-3		Not hydric
AmB	2e		Prime farmland	
Amanda		A-1		Not hydric
AmB2	2e		Prime farmland	
Amanda		A-1		Not hydric
AmC2	3e		Not prime farmland	
Amanda		A-1		Not hydric
AmD2	4e		Not prime farmland	
Amanda		A-1		Not hydric
AmE2	6e		Not prime farmland	
Amanda		A-3		Not hydric
AoC3	4e		Not prime farmland	
Amanda		A-1		Not hydric
AoD3	6e		Not prime farmland	
Amanda		A-1		Not hydric
ApB2	2e		Prime farmland	
Amanda		A-1		Not hydric
Loudonville		F-1		Not hydric
ApC2	3e		Not prime farmland	
Amanda		A-1		Not hydric
Loudonville		F-1		Not hydric
ApD2	4e		Not prime farmland	
Amanda		A-1		Not hydric
Loudonville		F-1		Not hydric
ArC2	3e		Not prime farmland	
Amanda		A-1		Not hydric
Ockley		A-1		Not hydric
ArD2	4e		Not prime farmland	
Amanda		A-1		Not hydric
Ockley		A-1		Not hydric
Bb	2w		Prime farmland where drained	
Beaucoup		C-3		Hydric

Interpretive Groups--Continued

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland classification	Hydric classification
BeA------------------	2w		Prime farmland where drained	
Bennington----------		C-1		Not hydric
BeB------------------	2e		Prime farmland where drained	
Bennington----------		C-1		Not hydric
BkF------------------	7e		Not prime farmland	
Berks---------------		H-1		Not hydric
CaB------------------	2e		Prime farmland	
Cardington----------		A-6		Not hydric
CaB2-----------------	2e		Prime farmland	
Cardington----------		A-6		Not hydric
CaC2-----------------	3e		Not prime farmland	
Cardington----------		A-6		Not hydric
CaD2-----------------	4e		Not prime farmland	
Cardington----------		A-6		Not hydric
Cb-------------------	3w		Not prime farmland	
Carlisle------------		D-1		Hydric
CdF------------------	7s		Not prime farmland	
Cedarfalls----------		H-1		Not hydric
Rock outcrop.				
CeB------------------	2e		Prime farmland	
Celina--------------		A-6		Not hydric
CfB------------------	2e		Prime farmland	
Centerburg----------		A-6		Not hydric
CfB2-----------------	2e		Prime farmland	
Centerburg----------		A-6		Not hydric
CfC2-----------------	3e		Not prime farmland	
Centerburg----------		A-6		Not hydric
Cg-------------------	2w		Prime farmland*	
Chagrin-------------		A-5		Not hydric
CkC2-----------------	3e		Not prime farmland	
Cincinnati----------		F-3		Not hydric
CmC2-----------------	3e		Not prime farmland	
Cincinnati----------		F-3		Not hydric
Wellston------------		A-6		Not hydric
Cn-------------------	3w		Prime farmland where drained	
Condit--------------		C-1		Hydric
CoB------------------	2e		Prime farmland	
Corwin--------------		A-1		Not hydric
CrA------------------	2w		Prime farmland where drained	
Crosby--------------		C-1		Not hydric

See footnote at end of table.

Interpretive Groups--Continued

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland classification	Hydric classification
CsA------------------	2w		Prime farmland where drained	
Canal---------------		C-1		Not hydric
Ee-------------------	2w		Prime farmland	
Eel-----------------		A-5		Not hydric
EkA------------------	2s		Prime farmland	
Eldean--------------		B-1		Not hydric
EkB------------------	2e		Prime farmland	
Eldean--------------		B-1		Not hydric
EnC2-----------------	3e		Not prime farmland	
Eldean--------------		B-1		Not hydric
Eu-------------------	2w		Prime farmland where drained	
Euclid--------------		C-1		Not hydric
FbA------------------	2w		Prime farmland where drained	
Fitchville----------		C-1		Not hydric
FhA------------------	2s		Prime farmland	
Fox-----------------		A-1		Not hydric
FhB------------------	2e		Prime farmland	
Fox-----------------		A-1		Not hydric
FhC2-----------------	3e		Not prime farmland	
Fox-----------------		A-1		Not hydric
FhD2-----------------	4e		Not prime farmland	
Fox-----------------		A-1		Not hydric
FmA------------------	2s		Prime farmland	
Fox-----------------		A-1		Not hydric
FmB------------------	2e		Prime farmland	
Fox-----------------		A-1		Not hydric
GaB------------------	2e		Prime farmland	
Gallman-------------		A-1		Not hydric
GcD------------------	4e		Not prime farmland	
Germano-------------		F-1		Not hydric
GcE------------------	6e		Not prime farmland	
Germano-------------		F-2		Not hydric
GdF------------------	7e		Not prime farmland	
Germano-------------		H-1		Not hydric
Rock outcrop.				
Gf-------------------	2w		Prime farmland	
Gessie--------------		A-5		Not hydric
Gg-------------------	2w		Prime farmland*	
Gessie--------------		A-5		Not hydric
GkC------------------	3e		Not prime farmland	
Gilpin--------------		F-1		Not hydric

See footnote at end of table.

Interpretive Groups--Continued

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland classification	Hydric classification
GkD	4e		Not prime farmland	
Gilpin		F-1		Not hydric
GnB	2e		Prime farmland	
Glenford		A-6		Not hydric
GnC2	3e		Not prime farmland	
Glenford		A-6		Not hydric
HhC2	3e		Not prime farmland	
Hickory		A-1		Not hydric
HkE	6e		Not prime farmland	
Hickory		A-3		Not hydric
Germano		B-2		Not hydric
HmD2	4e		Not prime farmland	
Hickory		A-1		Not hydric
Gilpin		F-1		Not hydric
HnC2	3e		Not prime farmland	
Homewood		F-3		Not hydric
HoD2	4e		Not prime farmland	
Homewood		F-3		Not hydric
Gilpin		F-1		Not hydric
HoE2	6e		Not prime farmland	
Homewood		F-4		Not hydric
Gilpin		F-2		Not hydric
JeB	2e		Prime farmland	
Jeneva		A-6		Not hydric
Km	2w		Prime farmland where drained	
Kokomo		C-1		Hydric
Ko	2w		Prime farmland where drained	
Kokomo		C-1		Hydric
Lk	2w		Prime farmland	
Lindside		A-5		Not hydric
LtC2	3e		Not prime farmland	
Loudonville		F-1		Not hydric
Steinsburg		F-1		Not hydric
LtD2	4e		Not prime farmland	
Loudonville		F-1		Not hydric
Steinsburg		B-1		Not hydric
LtE	6e		Not prime farmland	
Loudonville		F-2		Not hydric
Steinsburg		F-2		Not hydric
LtF	7e		Not prime farmland	
Loudonville		H-1		Not hydric
Steinsburg		H-1		Not hydric
Ma	2w		Prime farmland where drained	
Marengo		C-1		Hydric

See footnote at end of table.

Interpretive Groups--Continued

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland classification	Hydric classification
Mb-------------------	2w		Prime farmland where drained	
Marengo-------------		C-1		Hydric
McB------------------	3e		Prime farmland where drained	
McGary--------------		C-2		Not hydric
Me-------------------	2w		Prime farmland	
Medway--------------		A-5		Not hydric
MkB2-----------------	2e		Prime farmland	
Miamian-------------		A-1		Not hydric
MkC2-----------------	3e		Not prime farmland	
Miamian-------------		A-1		Not hydric
MmC3-----------------	4e		Not prime farmland	
Miamian-------------		A-1		Not hydric
Thrifton------------		B-1		Not hydric
MmD3-----------------	6e		Not prime farmland	
Miamian-------------		A-1		Not hydric
Thrifton------------		A-1		Not hydric
Mo-------------------	3w		Prime farmland where drained	
Montgomery----------		C-2		Hydric
Mr-------------------	4w		Not prime farmland	
Muskego-------------		D-1		Hydric
NaD2-----------------	4e		Not prime farmland	
Negley--------------		A-1		Not hydric
NaE------------------	6e		Not prime farmland	
Negley--------------		A-3		Not hydric
Ne-------------------	2w		Prime farmland	
Newark--------------		C-3		Not hydric
OcA------------------	1		Prime farmland	
Ockley--------------		A-1		Not hydric
OcB------------------	2e		Prime farmland	
Ockley--------------		A-1		Not hydric
Pa-------------------	2w		Prime farmland where drained	
Patton--------------		C-1		Hydric
Pb-------------------	2w		Prime farmland where drained	
Patton--------------		C-1		Hydric
Pe-------------------	2w		Prime farmland where drained	
Pewamo--------------		C-1		Hydric
Ph.				
Pits				
PkB------------------	2e		Prime farmland	
Pike----------------		A-6		Not hydric
PkC2-----------------	3e		Not prime farmland	
Pike----------------		A-6		Not hydric

See footnote at end of table.

Interpretive Groups--Continued

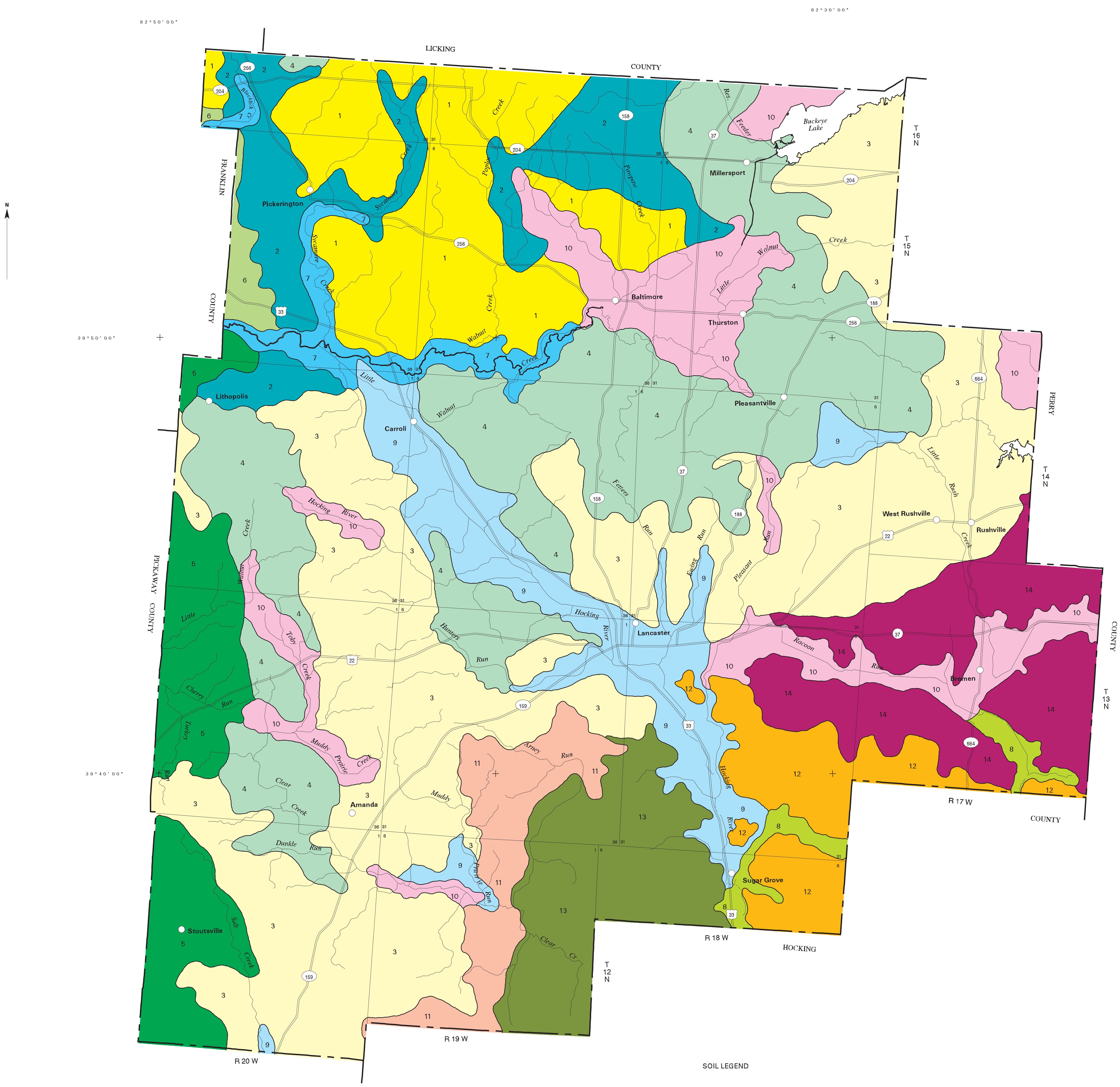
Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland classification	Hydric classification
Ro-------------------	3w		Prime farmland where drained	
Rockmill------------		C-1		Hydric
Rp-------------------	3w		Prime farmland where drained	
Rockmill------------		C-3		Hydric
Rt-------------------	2w		Prime farmland	
Rossburg------------		A-5		Not hydric
Sc-------------------	3w		Prime farmland where drained	
Sebring-------------		C-1		Hydric
SdD------------------	4e		Not prime farmland	
Shelocta------------		A-2		Not hydric
SeE------------------	6e		Not prime farmland	
Shelocta------------		A-3		Not hydric
Berks---------------		F-2		Not hydric
SfD------------------	4e		Not prime farmland	
Shelocta------------		A-2		Not hydric
Cruze---------------		A-2		Not hydric
SfE------------------	6e		Not prime farmland	
Shelocta------------		A-3		Not hydric
Cruze---------------		A-3		Not hydric
Sh-------------------	2w		Prime farmland where drained	
Shoals--------------		C-3		Not hydric
SkA------------------	2w		Prime farmland where drained	
Sleeth--------------		C-1		Not hydric
St-------------------	2w		Prime farmland	
Stonelick-----------		A-5		Not hydric
TaC2-----------------	3e		Not prime farmland	
Tarlton-------------		F-1		Not hydric
ThA------------------	1		Prime farmland	
Thackery------------		A-6		Not hydric
ThB------------------	2e		Prime farmland	
Thackery------------		A-6		Not hydric
Ud, Uf, Ug. Udorthents				
Um-------------------	---		Not prime farmland	
Urban land.				
Aetna---------------		---		Not hydric
UoC------------------	---		Not prime farmland	
Urban land.				
Amanda--------------		---		Not hydric
UrB------------------	---		Not prime farmland	
Urban land.				
Bennington----------		---		Not hydric

See footnote at end of table.

Interpretive Groups--Continued

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland classification	Hydric classification
UtC------------------	---		Not prime farmland	
Urban land.				
Cardington----------		---		Not hydric
UuB------------------	---		Not prime farmland	
Urban land.				
Celina--------------		---		Not hydric
UxB------------------	---		Not prime farmland	
Urban land.				
Ockley--------------		---		Not hydric
Uy-------------------	---		Not prime farmland	
Urban land.				
Udorthents----------		---		Not hydric
WdA------------------	1		Prime farmland	
Wea-----------------		A-1		Not hydric
WeC------------------	3e		Not prime farmland	
Wellston------------		A-6		Not hydric
WfC------------------	3e		Not prime farmland	
Wellston------------		A-6		Not hydric
Cruze---------------		A-6		Not hydric
Wg-------------------	2w		Prime farmland where drained	
Westland------------		C-1		Hydric
Wk-------------------	2w		Prime farmland where drained	
Westland------------		C-1		Hydric
ZnB------------------	2e		Prime farmland	
Zanesville----------		F-3		Not hydric
ZnC2-----------------	3e		Not prime farmland	
Zanesville----------		F-3		Not hydric

* Where protected from flooding or not frequently flooded during the growing season.



SOIL LEGEND

1	Bennington-Cardington-Pewamo association
2	Cardington-Bennington association
3	Amanda-Centerburg association
4	Centerburg-Marengo-Bennington association
5	Miamian-Kokomo-Celina association
6	Miamian-Celina-Crosby association
7	Gessie-Aetna association
8	Newark-Lindside-Chagrin association
9	Ockley-Fox association
10	Patton-Aetna association
11	Hickory-Cincinnati association
12	Shelocta-Berks-Gilpin association
13	Germano-Gilpin-Shelocta association
14	Alford-Cincinnati-Homewood association

Compiled 1998

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

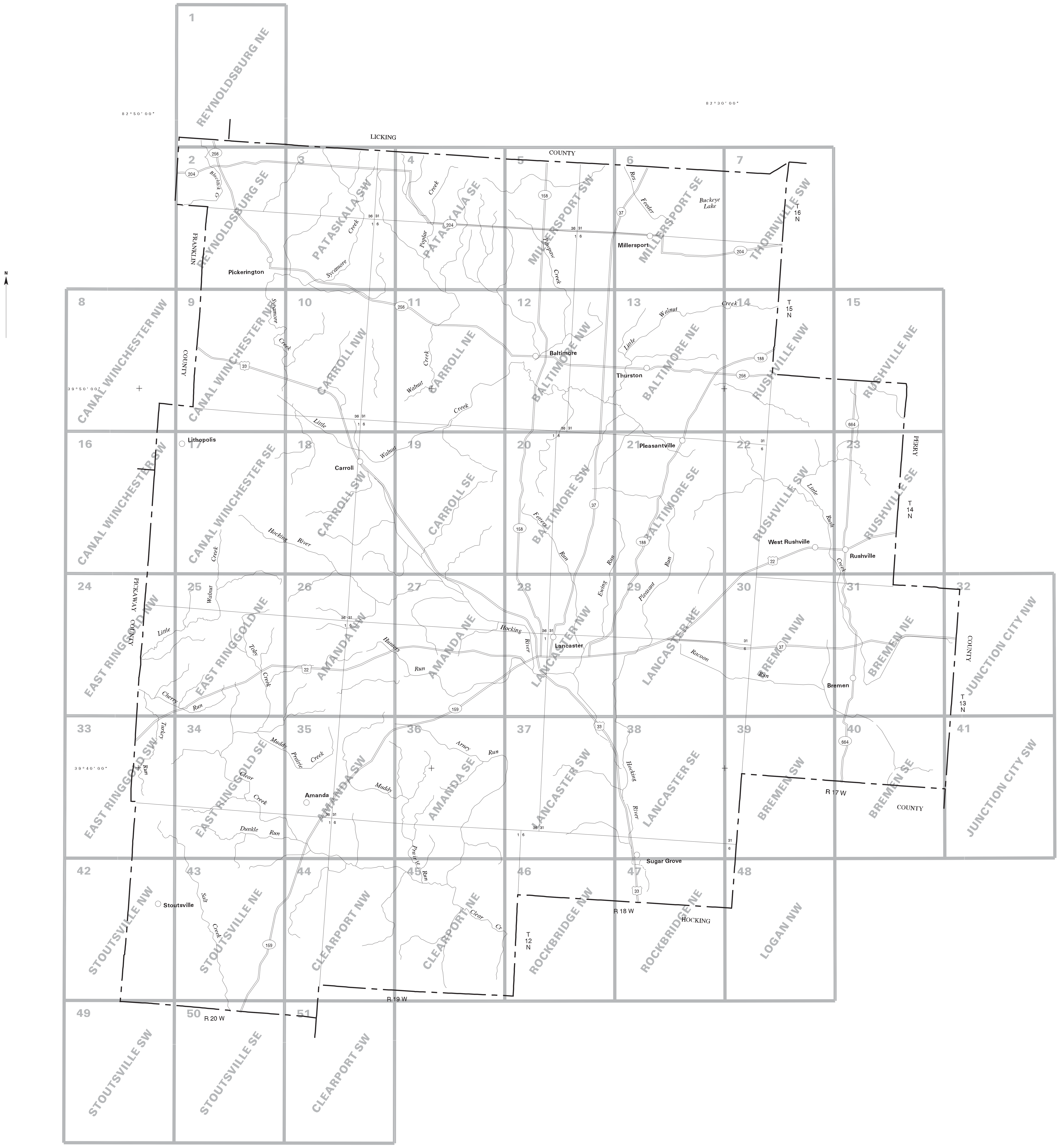
UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF SOIL AND WATER CONSERVATION
OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
OHIO STATE UNIVERSITY EXTENSION
FAIRFIELD SOIL AND WATER CONSERVATION DISTRICT AND FAIRFIELD COUNTY COMMISSIONERS

GENERAL SOIL MAP
FAIRFIELD COUNTY, OHIO

1 0 1 2 3
MILES

1 0 1 2 3 4 5 6
KILOMETERS

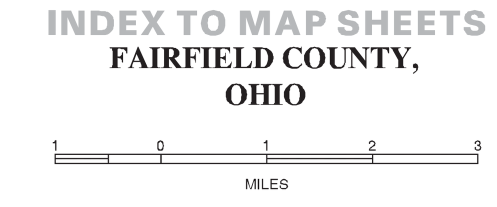
SCALE = 1:110000



SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

INDEX TO MAP SHEETS
FAIRFIELD COUNTY, OHIO



SCALE = 1:110000

SOIL LEGEND

Map symbols consist of a combination of letters and numbers. The first uppercase letter is the initial letter of the map unit name. The lowercase letter that follows separates map units that begin with the same letter. It does not separate sloping or eroded phases. The second uppercase letter indicates the class of slope. Symbols without a slope letter are for nearly level soils or for miscellaneous areas. A number 2 at the end of a symbol indicates that the map unit is moderately eroded, and a number 3 indicates that it is severely eroded.

SYMBOL	NAME
AfB	Alford silt loam, 2 to 6 percent slopes
AfC2	Alford silt loam, 6 to 12 percent slopes, eroded
Ag	Aetna silt loam, occasionally flooded
Ah	Aetna silt loam, fan, occasionally flooded
AmB	Amanda silt loam, 2 to 6 percent slopes
AmB2	Amanda silt loam, 2 to 6 percent slopes, eroded
AmC2	Amanda silt loam, 6 to 12 percent slopes, eroded
AmD2	Amanda silt loam, 12 to 20 percent slopes, eroded
AmE2	Amanda silt loam, 20 to 35 percent slopes, eroded
AoC3	Amanda silty clay loam, 6 to 12 percent slopes, severely eroded
AoD3	Amanda silty clay loam, 12 to 20 percent slopes, severely eroded
ApB2	Amanda-Loudonville complex, 2 to 6 percent slopes, eroded
ApC2	Amanda-Loudonville complex, 6 to 12 percent slopes, eroded
ApD2	Amanda-Loudonville complex, 12 to 20 percent slopes, eroded
ArC2	Amanda-Ockley complex, 6 to 12 percent slopes, eroded
ArD2	Amanda-Ockley complex, 12 to 20 percent slopes, eroded
Bb	Beaucoup silty clay loam, occasionally flooded
BeA	Bennington silt loam, 0 to 2 percent slopes
BeB	Bennington silt loam, 2 to 6 percent slopes
BkF	Berks channery silt loam, 40 to 70 percent slopes
CaB	Cardington silt loam, 2 to 6 percent slopes
CaB2	Cardington silt loam, 2 to 6 percent slopes, eroded
CaC2	Cardington silt loam, 6 to 12 percent slopes, eroded
CaD2	Cardington silt loam, 12 to 20 percent slopes, eroded
Cb	Carlisle muck
CdF	Cedarfalls-Rock outcrop complex, 40 to 70 percent slopes
CeB	Celina silt loam, 2 to 6 percent slopes
CfB	Centerburg silt loam, 2 to 6 percent slopes
CfB2	Centerburg silt loam, 2 to 6 percent slopes, eroded
CfC2	Centerburg silt loam, 6 to 12 percent slopes, eroded
Cg	Chagrin silt loam, frequently flooded
CkC2	Cincinnati silt loam, 6 to 12 percent slopes, eroded
CmC2	Cincinnati-Wellston complex, 6 to 12 percent slopes, eroded
Cn	Condit silt loam
CoB	Corwin silt loam, 2 to 6 percent slopes
CrA	Crosby silt loam, 0 to 2 percent slopes
CsA	Canal silt loam, 0 to 2 percent slopes
Ee	Eel silt loam, gravelly substratum, occasionally flooded
EkA	Eldean silt loam, 0 to 2 percent slopes
EkB	Eldean silt loam, 2 to 6 percent slopes
EnC2	Eldean gravelly loam, 6 to 12 percent slopes, eroded
Eu	Euclid silt loam, rarely flooded
FbA	Fitchville silt loam, 0 to 2 percent slopes
FhA	Fox loam, 0 to 2 percent slopes
FhB	Fox loam, 2 to 6 percent slopes
FhC2	Fox loam, 6 to 12 percent slopes, eroded
FhD2	Fox loam, 12 to 20 percent slopes, eroded
FmA	Fox silt loam, 0 to 2 percent slopes
FmB	Fox silt loam, 2 to 6 percent slopes
GaB	Gallman silt loam, loamy substratum, 2 to 6 percent slopes
GcD	Germano sandy loam, 15 to 25 percent slopes
GcE	Germano sandy loam, 25 to 40 percent slopes
GdF	Germano-Rock outcrop complex, 40 to 70 percent slopes
Gf	Gessie silt loam, occasionally flooded
Gg	Gessie silt loam, frequently flooded
GkC	Gilpin silt loam, 6 to 15 percent slopes
GkD	Gilpin silt loam, 15 to 25 percent slopes
GnB	Glenford silt loam, 2 to 6 percent slopes
GnC2	Glenford silt loam, 6 to 15 percent slopes, eroded
HhC2	Hickory silt loam, 6 to 12 percent slopes, eroded
HkE	Hickory-Germano complex, 20 to 35 percent slopes
HmD2	Hickory-Gilpin complex, 12 to 20 percent slopes, eroded
HnC2	Homewood silt loam, 6 to 12 percent slopes, eroded

SYMBOL	NAME
HoD2	Homewood-Gilpin complex, 12 to 20 percent slopes, eroded
HoE2	Homewood-Gilpin complex, 20 to 35 percent slopes, eroded
JeB	Jeneva silt loam, 2 to 6 percent slopes
Km	Kokomo silt loam, overwash
Ko	Kokomo silty clay loam
Lk	Lindside silt loam, occasionally flooded
LtC2	Loudonville-Steinsburg complex, 6 to 12 percent slopes, eroded
LtD2	Loudonville-Steinsburg complex, 12 to 20 percent slopes, eroded
LtE	Loudonville-Steinsburg complex, 20 to 35 percent slopes
LtF	Loudonville-Steinsburg complex, 35 to 70 percent slopes
Ma	Marengo clay loam
Mb	Marengo silt loam, overwash
McB	McGary silt loam, 2 to 6 percent slopes
Me	Medway silt loam, occasionally flooded
MkB2	Miamian silt loam, 2 to 6 percent slopes, eroded
MkC2	Miamian silt loam, 6 to 12 percent slopes, eroded
MmC3	Miamian-Thrifton complex, 6 to 12 percent slopes, severely eroded
MmD3	Miamian-Thrifton complex, 12 to 20 percent slopes, severely eroded
Mo	Montgomery silty clay loam
Mr	Muskego muck
NaD2	Negley loam, 12 to 20 percent slopes, eroded
NaE	Negley loam, 20 to 35 percent slopes
Ne	Newark silt loam, occasionally flooded
OcA	Ockley silt loam, 0 to 2 percent slopes
OcB	Ockley silt loam, 2 to 6 percent slopes
Pa	Patton silty clay loam
Pb	Patton silty clay loam, rarely flooded
Pe	Pewamo silty clay loam
Ph	Pits, quarry
PkB	Pike silt loam, 2 to 6 percent slopes
PkC2	Pike silt loam, 6 to 12 percent slopes, eroded
Ro	Rockmill silty clay loam
Rp	Rockmill silty clay loam, occasionally flooded
Rt	Rossburg silt loam, occasionally flooded
Sc	Sebring silt loam, rarely flooded
SdD	Shelocta silt loam, 15 to 25 percent slopes
SeE	Shelocta-Berks complex, 25 to 40 percent slopes
SfD	Shelocta-Cruze complex, 15 to 25 percent slopes
SfE	Shelocta-Cruze complex, 25 to 40 percent slopes
Sh	Shoals silt loam, occasionally flooded
SkA	Sleeth silt loam, 0 to 2 percent slopes
St	Stonelick sandy loam, occasionally flooded
TaC2	Tarlton silt loam, 6 to 12 percent slopes, eroded
ThA	Thackery silt loam, 0 to 2 percent slopes
ThB	Thackery silt loam, 2 to 6 percent slopes
Ud	Udorthents, loamy
Uf	Udorthents, loamy, organic substratum
Ug	Udorthents, sandy
Um	Urban land-Aetna complex, rarely flooded
UoC	Urban land-Amanda complex, 2 to 12 percent slopes
UrB	Urban land-Bennington complex, 0 to 6 percent slopes
UtC	Urban land-Cardington complex, 2 to 12 percent slopes
UuB	Urban land-Celina complex, 0 to 6 percent slopes
UxB	Urban land-Ockley complex, 0 to 6 percent slopes
Uy	Urban land-Udorthents complex
W	Water
WdA	Wea silt loam, 0 to 2 percent slopes
WeC	Wellston silt loam, 6 to 15 percent slopes
WfC	Wellston-Cruze complex, 8 to 15 percent slopes
Wg	Westland silt loam, overwash
Wk	Westland silty clay loam
ZnB	Zanesville silt loam, 2 to 6 percent slopes
ZnC2	Zanesville silt loam, 6 to 15 percent slopes, eroded

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

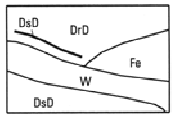
FAIRFIELD COUNTY, OHIO

OHIO DEPARTMENT OF NATURAL RESOURCES, DIVISION OF SOIL AND WATER CONSERVATION
OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
OHIO STATE UNIVERSITY EXTENSION
FAIRFIELD SOIL AND WATER CONSERVATION DISTRICT
FAIRFIELD COUNTY COMMISSIONERS

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

SOIL SURVEY FEATURES

SOIL DELINEATIONS AND SYMBOLS



STANDARD LANDFORM AND MISCELLANEOUS SURFACE FEATURES

- Escarpment, bedrock
- Escarpment, nonbedrock
- Gravel pit
- Levee
- Marsh or swamp
- Mine or quarry
- Rock outcrop
- Severely eroded spot
- Short steep slope
- Wet spot

AD HOC FEATURES

- Typical pedon

CULTURAL FEATURES

BOUNDARIES

- County or parish
- Minor civil division
- Map sheet neatline
- Quadrangle matchline (shown in white)
- Public land survey system section corner tics

TRANSPORTATION (shown in white)

- Divided road
- Other road

ROAD EMBLEMS & DESIGNATIONS

- Interstate
- Federal
- State
- County, farm, or ranch

LOCATED OBJECTS

- Cemetery

HYDROGRAPHIC FEATURES

- Drainage end (indicates direction of flow)
- Perennial stream
- Intermittent stream
- Perennial drainage or irrigation ditch
- Intermittent drainage or irrigation ditch

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
REYNOLDSBURG NE QUADRANGLE
SHEET NUMBER 1 OF 51

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

INDEX TO ADJOINING 3.75 MAPS

2 PATASKALA NW
3 REYNOLDSBURG SE
3 REYNOLDSBURG SE
4 PATASKALA SW

REYNOLDSBURG NE, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 1 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
REYNOLDSBURG SE QUADRANGLE (OVERSIZED)
SHEET NUMBER 2 OF 51

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

	1	2
3		4
9	10	11

1 REYNOLDSBURG NE
2 PATASKALA NW
3 REYNOLDSBURG SE
4 PATASKALA SW
9 CANAL WINCHESTER NW
10 CANAL WINCHESTER NE
11 CARROLL NW

INDEX TO ADJOINING 3.75 MAPS

REYNOLDSBURG SE, (OVERSIZED) OHIO
3.75 MINUTE SERIES
SHEET NUMBER 2 OF 51

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
PATASKALA SW QUADRANGLE (OVERSIZED)
SHEET NUMBER 3 OF 51

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	3	
2		4
9	10	11

1 REYNOLDSBURG NE
3 PATASKALA SW
2 REYNOLDSBURG SE
4 PATASKALA SE
9 CANAL WINCHESTER NE
10 CARROLL NW
11 CARROLL NE

INDEX TO ADJOINING 3.75 MAPS

PATASKALA SW, (OVERSIZED) OHIO
3.75 MINUTE SERIES
SHEET NUMBER 3 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
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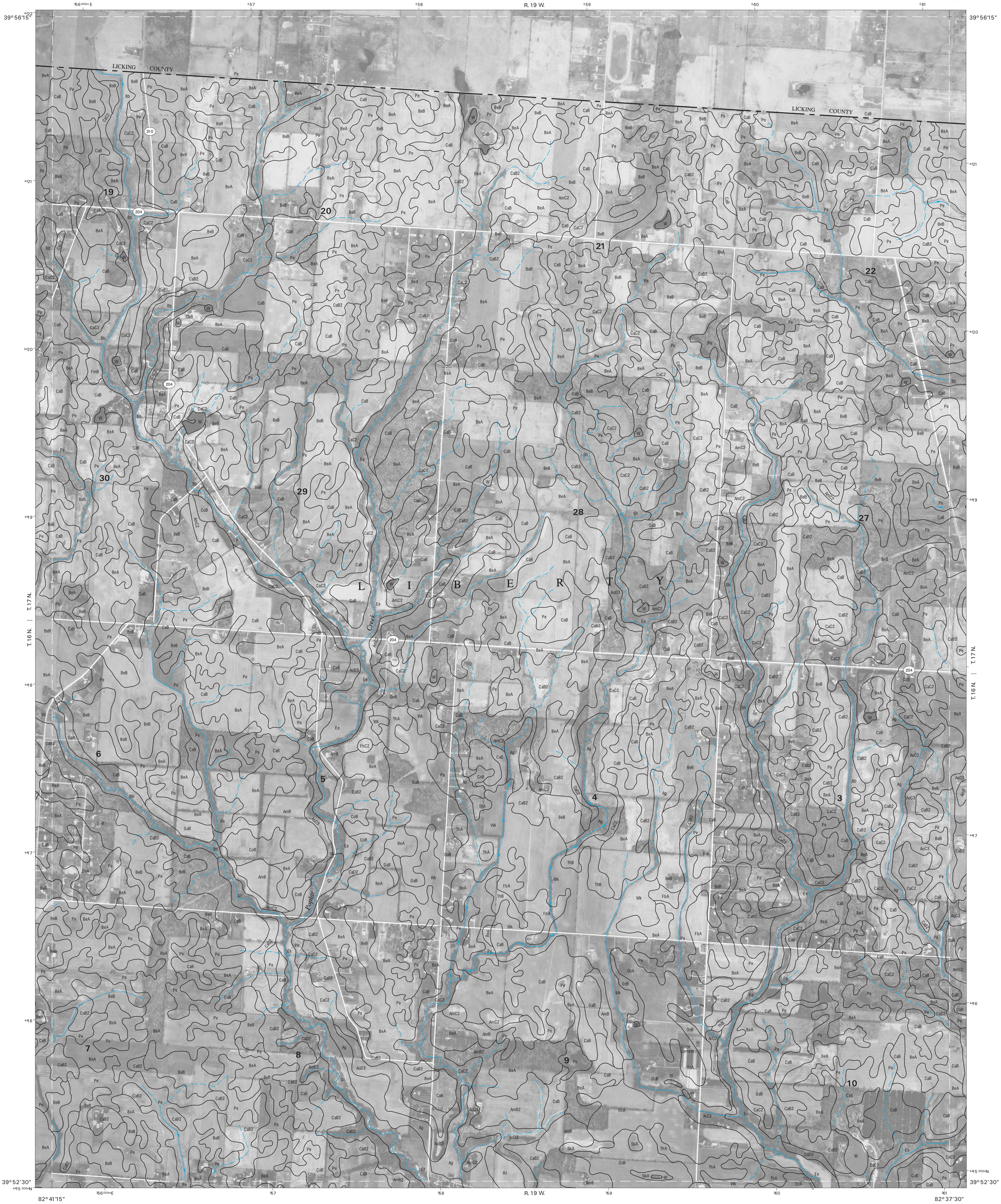
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
PATASKALA SE QUADRANGLE
SHEET NUMBER 4 OF 51



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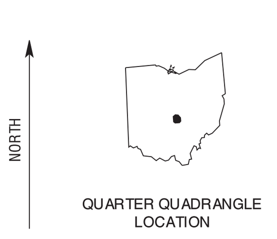
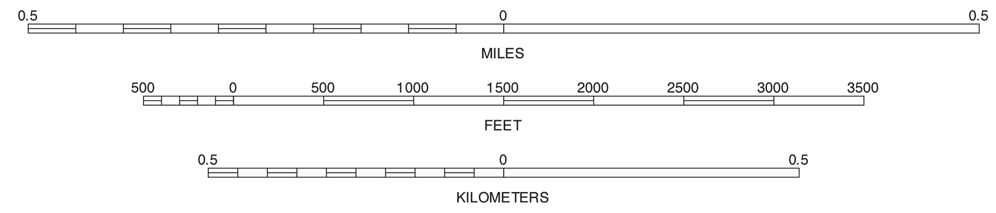
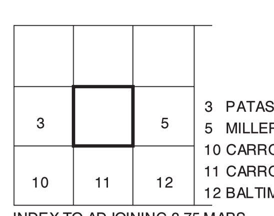


QUARTER QUADRANGLE LOCATION

SCALE 1:12000





3 PATASKALA SW
5 MILLERSPORT SW
10 CARROLL NW
11 CARROLL NE
12 BALTIMORE NW

INDEX TO ADJOINING 3.75 MAPS

PATASKALA SE, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 4 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
MILLERSPORT SW QUADRANGLE

82° 37′30″ | 39° 56′15″ | 82° 33′45″ | 39° 56′15″

39° 52′30″ | 82° 37′30″ | 82° 33′45″ | 39° 52′30″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 | 0 | 0.5
MILES

500 | 0 | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500
FEET

0.5 | 0 | 0.5
KILOMETERS

4 PATASKALA SE
6 MILLERSPORT SE
11 CARROLL NE
12 BALTIMORE NW
13 BALTIMORE NE

INDEX TO ADJOINING 3.75 MAPS

MILLERSPORT SW, OHIO
3.75 MINUTE SERIES

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

82° 33′45″ — 367 000m E — 368 — 369 — R. 18 W. — 370 — 371 — 82° 30′00″

39° 56′15″

39° 52′30″

82° 33′45″ — 367 000m E — 368 — 369 — R. 18 W. — 370 — 371 — 82° 30′00″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

5 MILLERSPORT SW
7 THORNVILLE SW
12 BALTIMORE NW
13 BALTIMORE NE
14 RUSHVILLE NW

INDEX TO ADJOINING 3.75 MAPS

MILLERSPORT SE, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 6 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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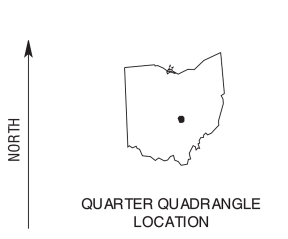
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5	0	0.5

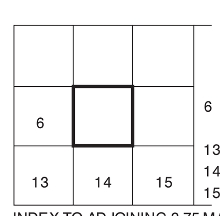
MILES

500 0 500 1000 1500 2000 2500 3000 3500

FEET

0.5 0 0.5

KILOMETERS



6 MILLERSPORT SE
13 BALTIMORE NE
14 RUSHVILLE NW
15 RUSHVILLE NE

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THORNVILLE SW, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 7 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
CANAL WINCHESTER NW QUADRANGLE
SHEET NUMBER 8 OF 51

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

	2	2
		9
	16	17

2 REYNOLDSBURG SE
2 REYNOLDSBURG SE
9 CANAL WINCHESTER NE
16 CANAL WINCHESTER SW
17 CANAL WINCHESTER SE

INDEX TO ADJOINING 3.75 MAPS

CANAL WINCHESTER NW, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 8 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
CANAL WINCHESTER NE QUADRANGLE
SHEET NUMBER 9 OF 51

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 | 0 | 0.5

FEET: 500 | 0 | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500

KILOMETERS: 0.5 | 0 | 0.5

2	2	3
8		10
16	17	18

2 REYNOLDSBURG SE
2 REYNOLDSBURG SE
3 PATASKALA SW
8 CANAL WINCHESTER NW
10 CARROLL NW
16 CANAL WINCHESTER SW
17 CANAL WINCHESTER SE
18 CARROLL SW

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CANAL WINCHESTER NE, OHIO
3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
CARROLL NW QUADRANGLE
SHEET NUMBER 10 OF 51

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

2	3	4
9		11
17	18	19

2 REYNOLDSBURG SE
3 PATASKALA SW
4 PATASKALA SE
9 CANAL WINCHESTER NE
11 CARROLL NE
17 CANAL WINCHESTER SE
18 CARROLL SW
19 CARROLL SE

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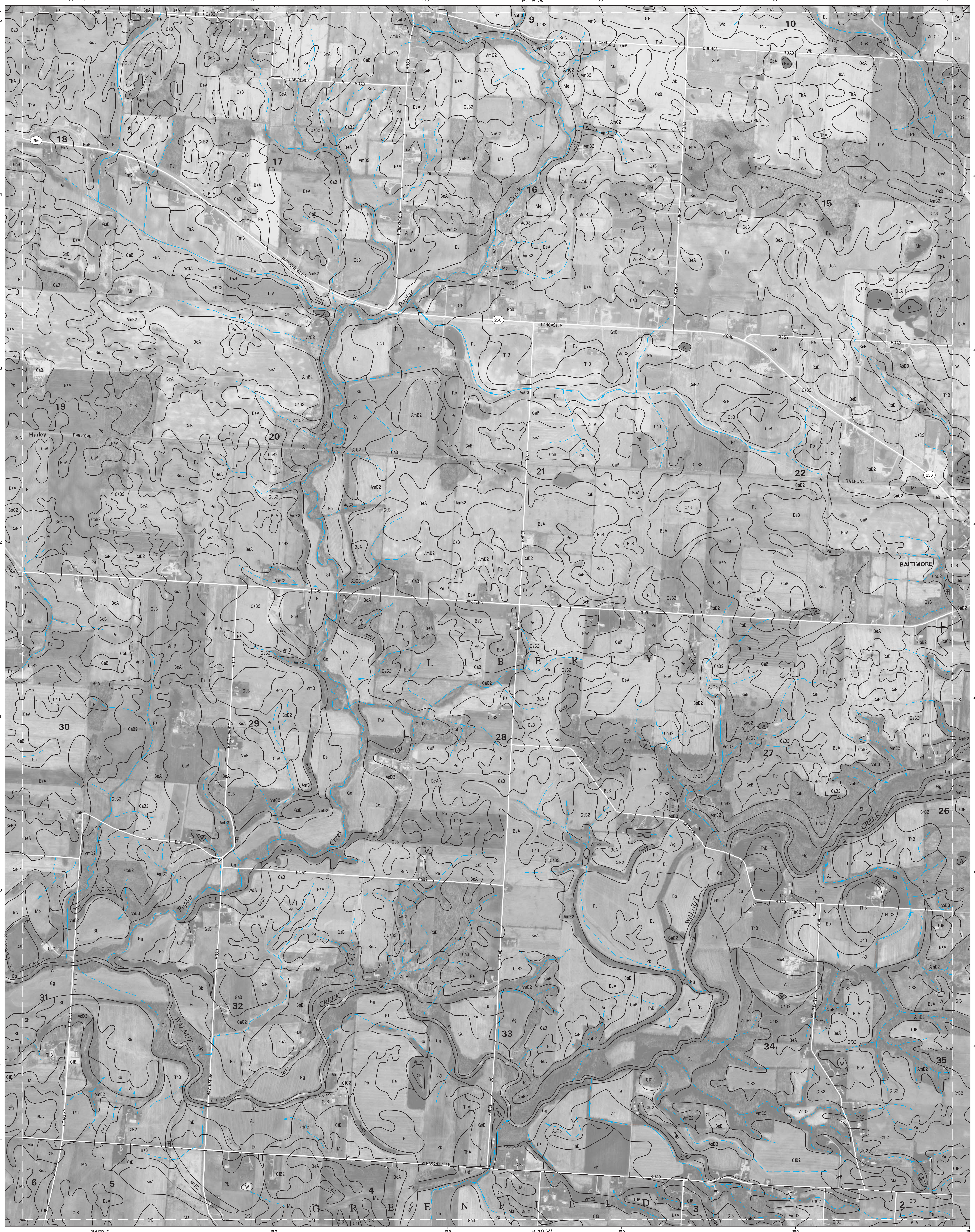
CARROLL NW, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 10 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
CARROLL NE QUADRANGLE
SHEET NUMBER 11 OF 51



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES 0.5 — 0 — 0.5

FEET 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS 0.5 — 0 — 0.5

3	4	5
10		12
18	19	20

3 PATASKALA SW
4 PATASKALA SE
5 MILLERSPORT SW
10 CARROLL NW
12 BALTIMORE NW
18 CARROLL SW
19 CARROLL SE
20 BALTIMORE SW

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CARROLL NE, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 11 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
BALTIMORE NW QUADRANGLE
SHEET NUMBER 12 OF 51

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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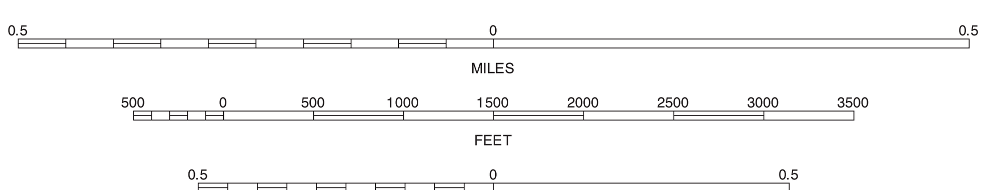
SCALE 1:12000



4	5	6
11		13
19	20	21

4 PATASKALA SE
5 MILLERSPORT SW
6 MILLERSPORT SE
11 CARROLL NE
13 BALTIMORE NE
19 CARROLL SE
20 BALTIMORE SW
21 BALTIMORE SE

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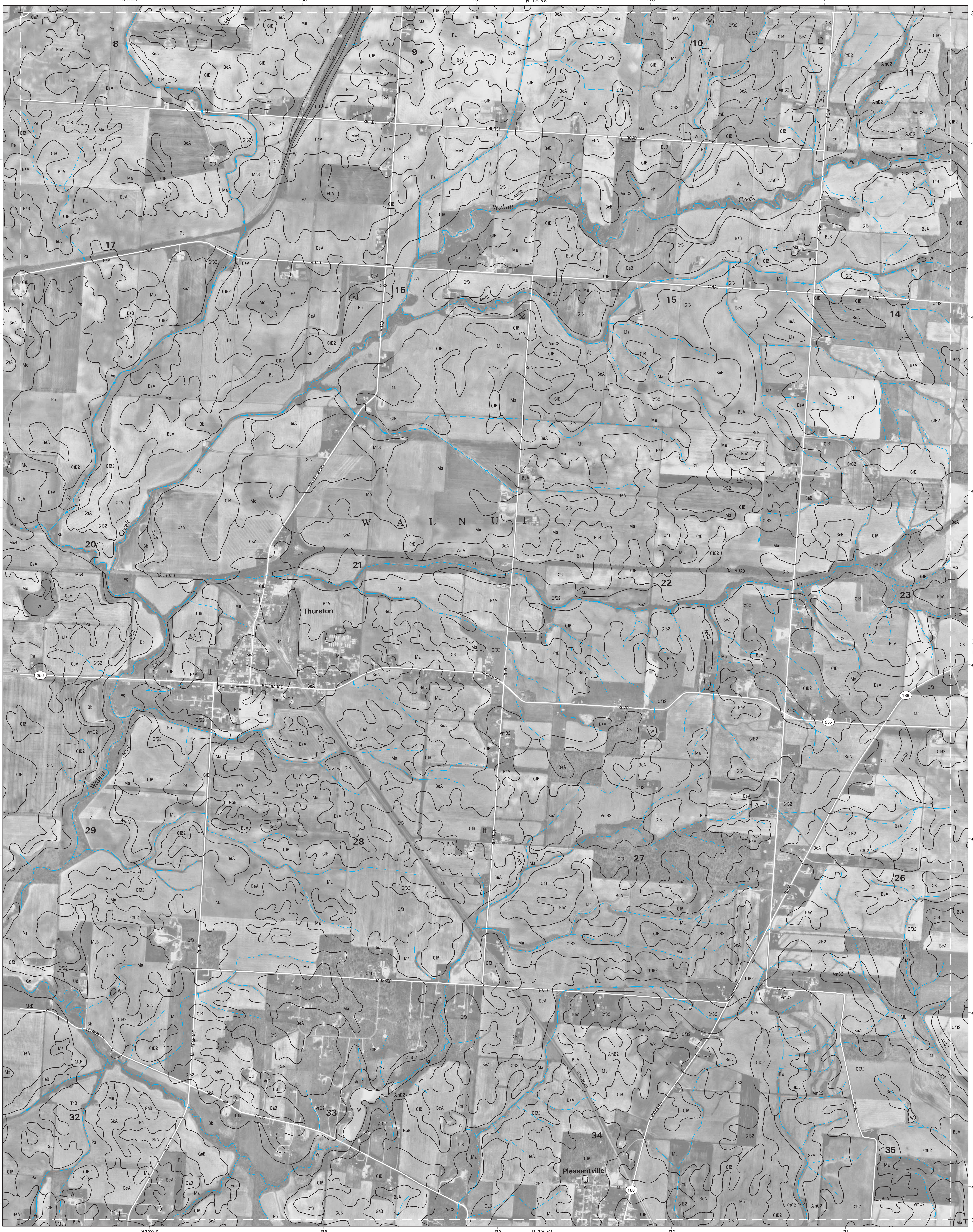
BALTIMORE NW, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 12 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 — 0 — 0.5
MILES

500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500
FEET

0.5 — 0 — 0.5
KILOMETERS

5	6	7
12		14
20	21	22

5 MILLERSPORT SW
6 MILLERSPORT SE
7 THORNVILLE SW
12 BALTIMORE NW
14 RUSHVILLE NW
20 BALTIMORE SW
21 BALTIMORE SE
22 RUSHVILLE SW

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3.75 MINUTE SERIES
SHEET NUMBER 13 OF 51

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
RUSHVILLE NW QUADRANGLE
SHEET NUMBER 14 OF 51

82° 30′00″ | 372000m E | 373 | 374 | R. 18 W. | R. 17 W. | 375 | 376 | 82° 26′15″ | 377

39° 52′30″

39° 48′45″

82° 30′00″ | 372000m E | 373 | R. 18 W. | R. 17 W. | 374 | 375 | 376 | 82° 26′15″ | 377

T. 16 N. | T. 18 N. | T. 17 N.

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NORTH

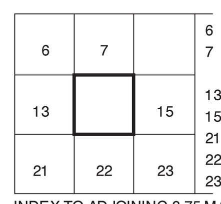
QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 | 0 | 0.5
MILES

500 | 0 | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500
FEET

0.5 | 0 | 0.5
KILOMETERS



6 MILLERSPORT SE
7 THORNVILLE SW
13 BALTIMORE NE
15 RUSHVILLE NE
21 BALTIMORE SE
22 RUSHVILLE SW
23 RUSHVILLE SE

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RUSHVILLE NW, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 14 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
RUSHVILLE NE QUADRANGLE
SHEET NUMBER 15 OF 51

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

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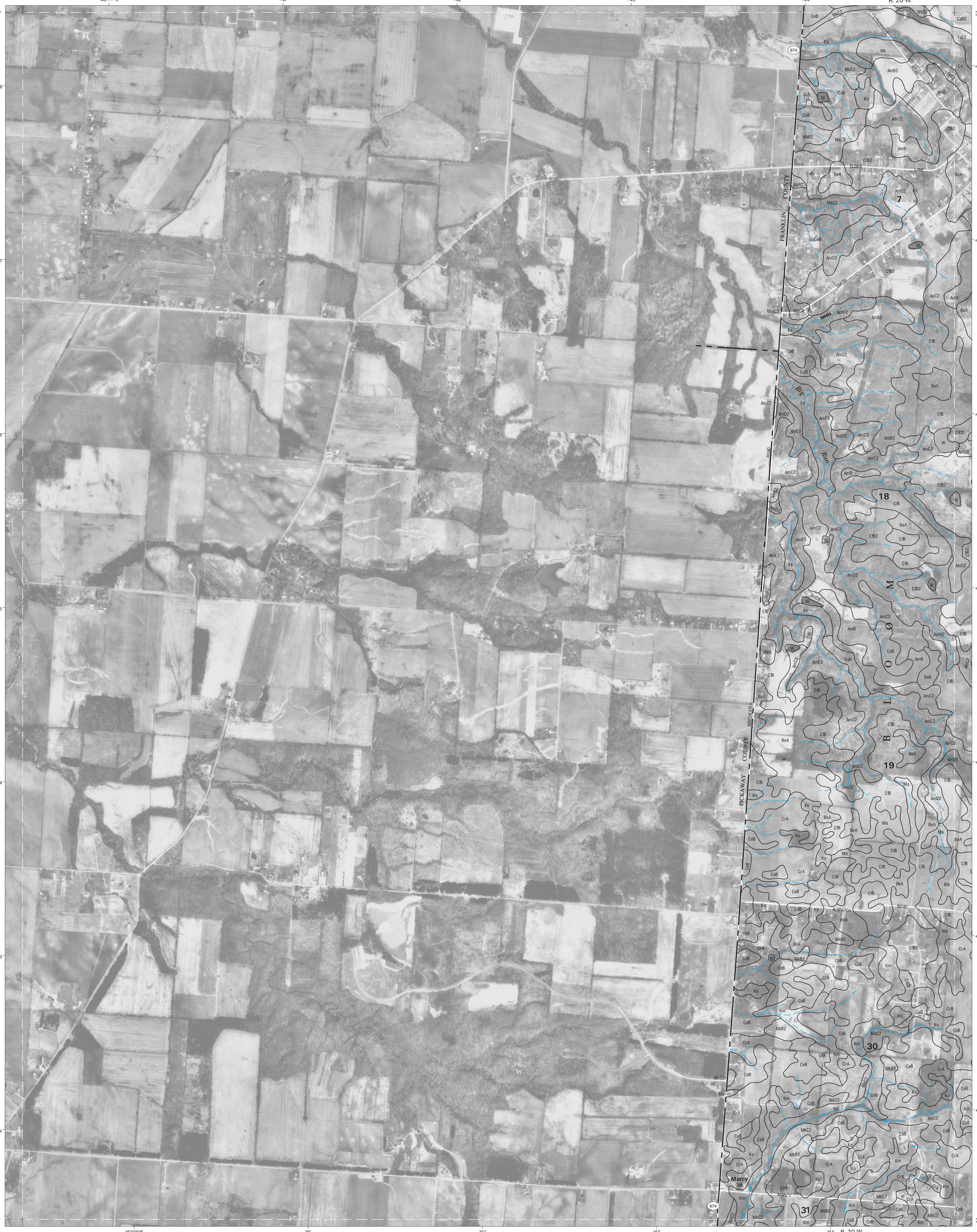
7 THORNVILLE SW
14 RUSHVILLE NW
22 RUSHVILLE SW
23 RUSHVILLE SE

RUSHVILLE NE, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 15 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
CANAL WINCHESTER SW QUADRANGLE
SHEET NUMBER 16 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES (0.5 – 0 – 0.5)

FEET (500 – 0 – 500 – 1000 – 1500 – 2000 – 2500 – 3000 – 3500)

KILOMETERS (0.5 – 0 – 0.5)

	8	9
	■	17
	24	25

8 CANAL WINCHESTER NW
9 CANAL WINCHESTER NE
17 CANAL WINCHESTER SE
24 EAST RINGGOLD NW
25 EAST RINGGOLD NE

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CANAL WINCHESTER SW, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 16 OF 51

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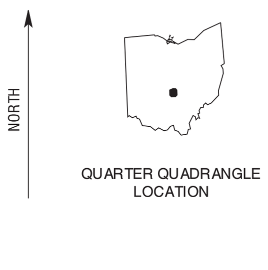
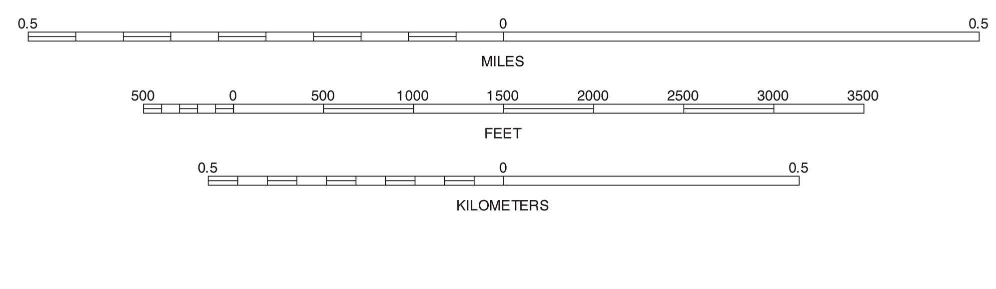


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



8	9	10
16		18
24	25	26

8 CANAL WINCHESTER NW
9 CANAL WINCHESTER NE
10 CARROLL NW
16 CANAL WINCHESTER SW
18 CARROLL SW
24 EAST RINGGOLD NW
25 EAST RINGGOLD NE
26 AMANDA NW

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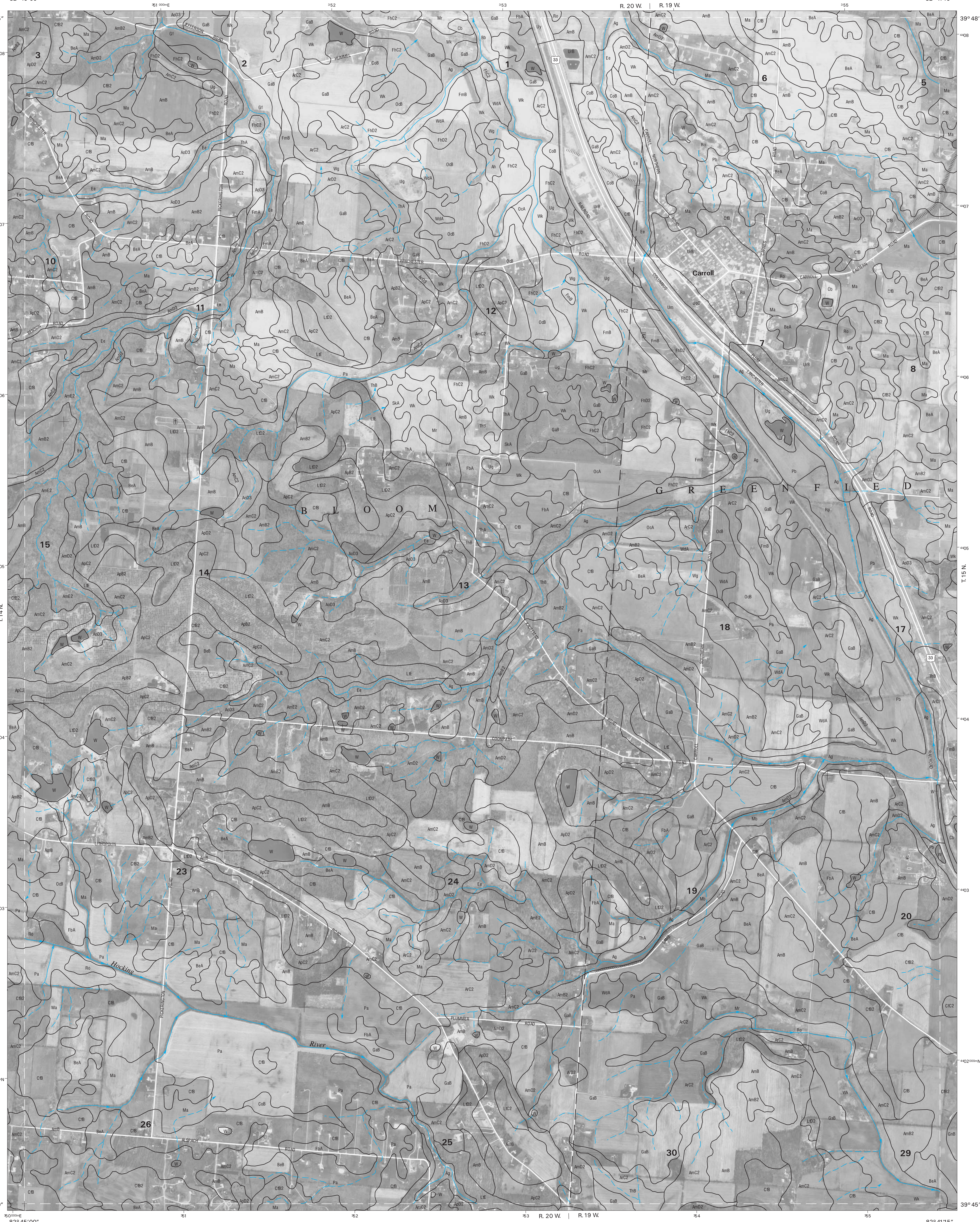
CANAL WINCHESTER SE, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 17 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
CARROLL SW QUADRANGLE
SHEET NUMBER 18 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

INDEX TO ADJOINING 3.75 MAPS

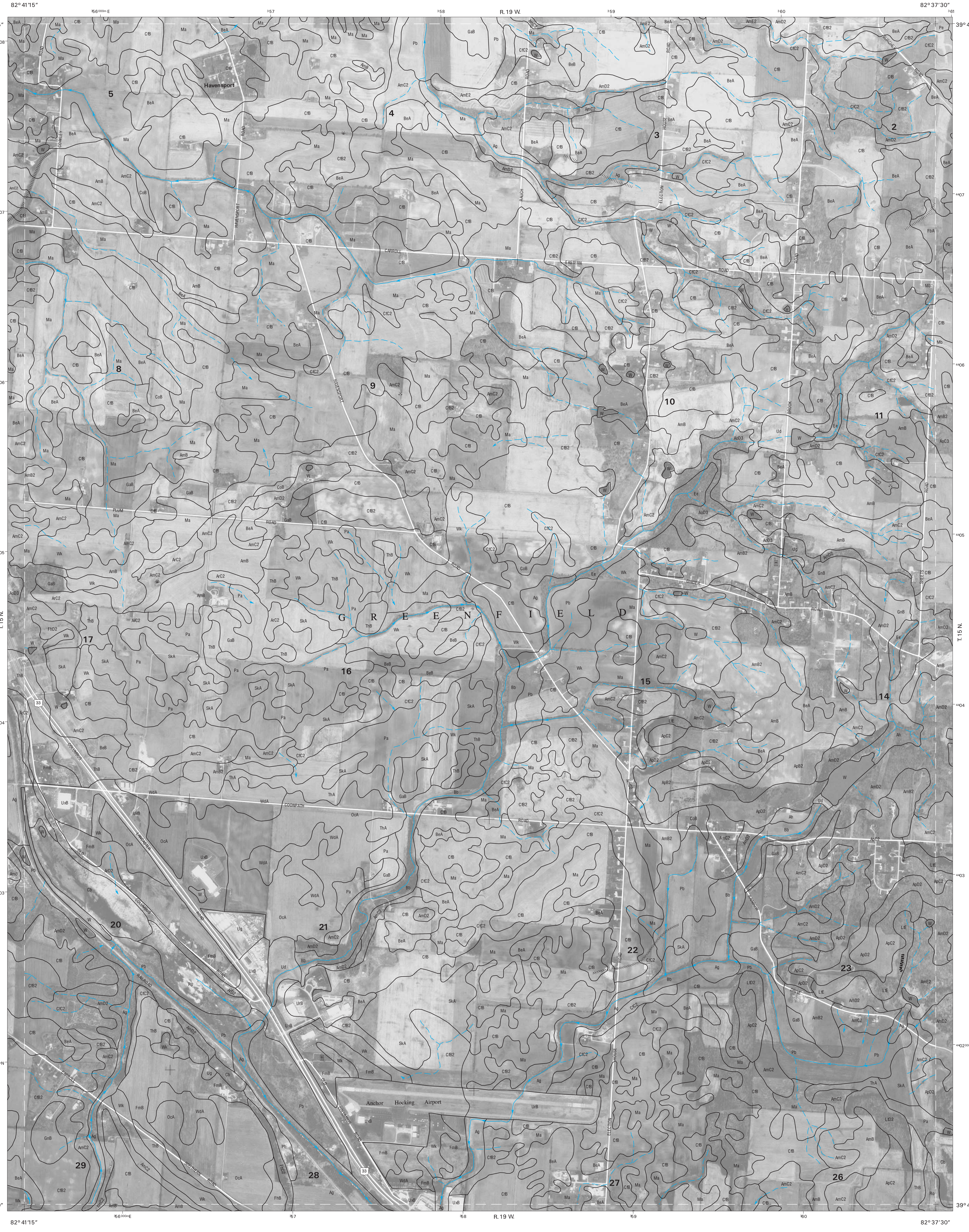
9 CANAL WINCHESTER NE
10 CARROLL NW
11 CARROLL NE
17 CANAL WINCHESTER SE
19 CARROLL SE
25 EAST RIGGOLD NE
26 AMANDA NW
27 AMANDA NE

CARROLL SW, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 18 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
CARROLL SE QUADRANGLE
SHEET NUMBER 19 OF 51



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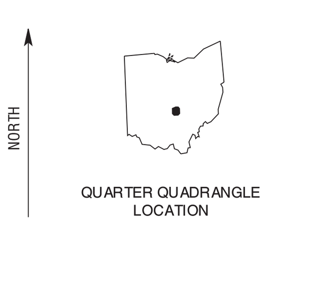
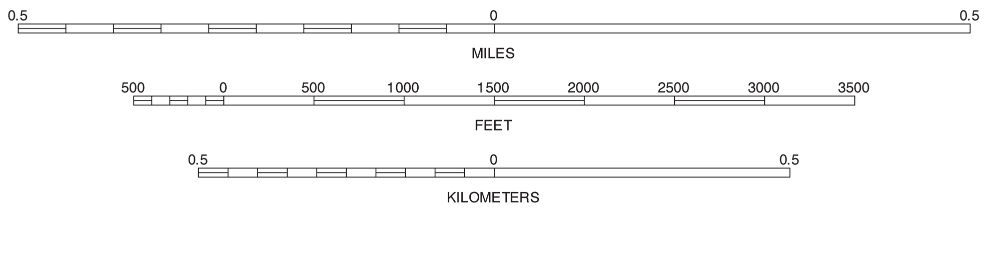
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.





10	11	12
18		20
26	27	28

10 CARROLL NW
11 CARROLL NE
12 BALTIMORE NW
18 CARROLL SW
20 BALTIMORE SW
26 AMANDA NW
27 AMANDA NE
28 LANCASTER NW

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CARROLL SE, OHIO
3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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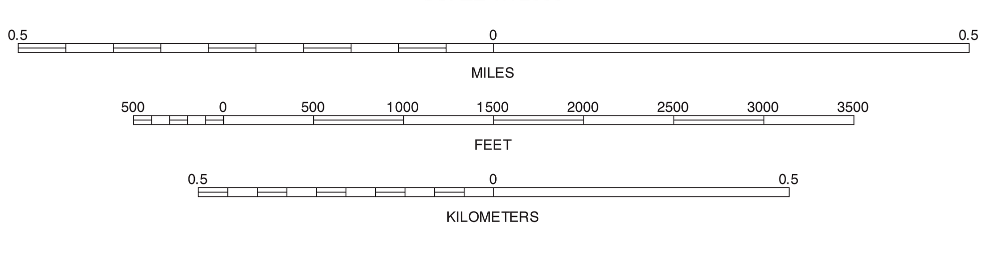
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:12000



11	12	13
19		21
27	28	29

11 CARROLL NE
12 BALTIMORE NW
13 BALTIMORE NE
19 CARROLL SE
21 BALTIMORE SE
27 AMANDA NE
28 LANCASTER NW
29 LANCASTER NE

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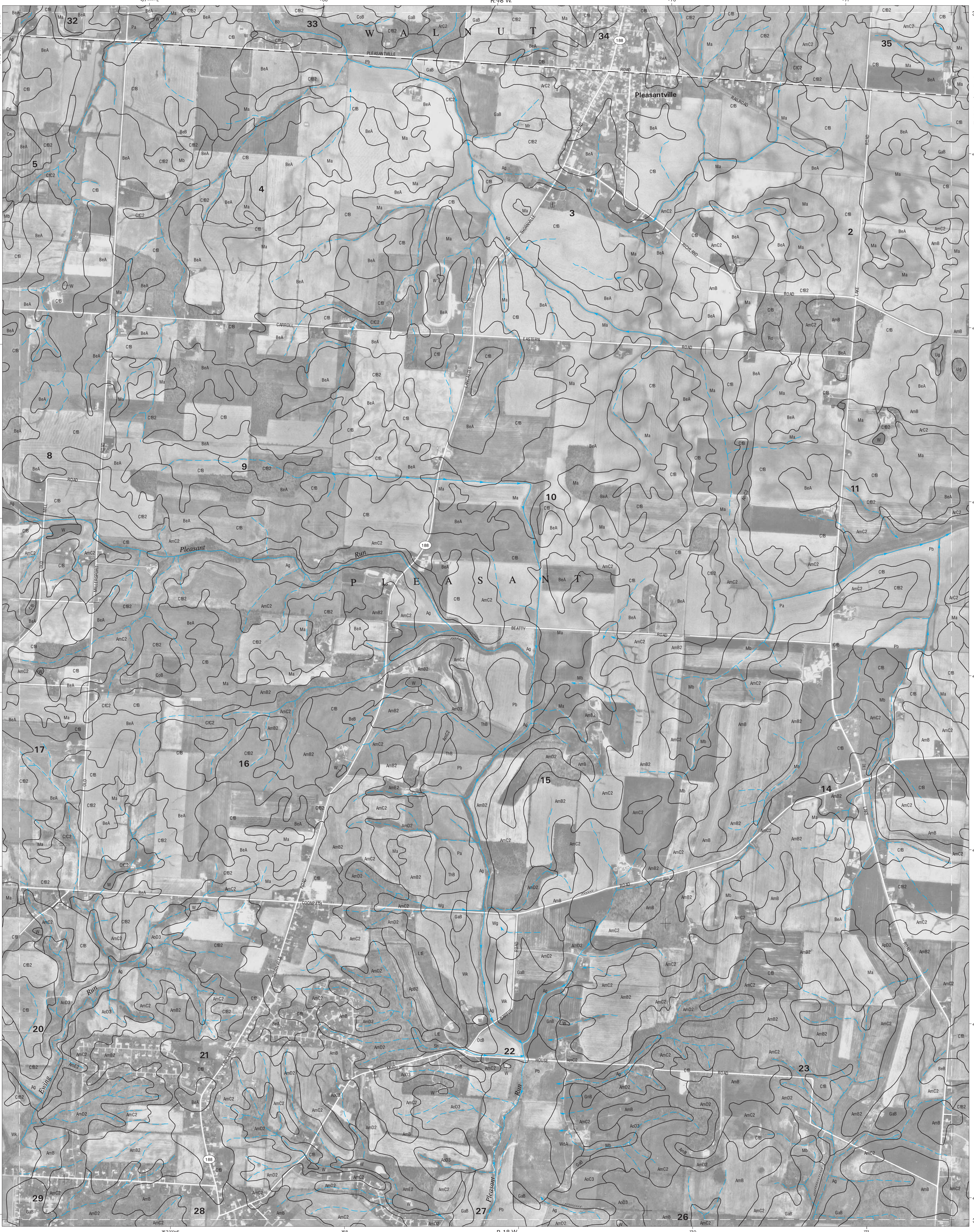
BALTIMORE SW, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 20 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

82° 33′45″ — 82° 30′00″
39° 48′45″ — 39° 45′00″



82° 33′45″ — $^{3}67^{000m}$E — $^{3}68$ — R. 18 W. — $^{3}70$ — $^{3}71$ — 82° 30′00″

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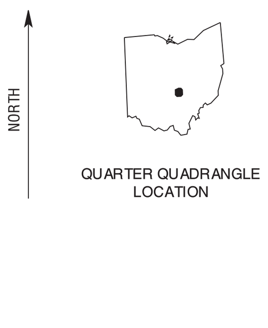
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 — 0 — 0.5
MILES

500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500
FEET

0.5 — 0 — 0.5
KILOMETERS

12	13	14
20		22
28	29	30

12 BALTIMORE NW
13 BALTIMORE NE
14 RUSHVILLE NW
20 BALTIMORE SW
22 RUSHVILLE SW
28 LANCASTER NW
29 LANCASTER NE
30 BREMEN NW

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BALTIMORE SE, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 21 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
RUSHVILLE SW QUADRANGLE
SHEET NUMBER 22 OF 51

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

13	14	15
21		23
29	30	31

13 BALTIMORE NE
14 RUSHVILLE NW
15 RUSHVILLE NE
21 BALTIMORE SE
23 RUSHVILLE SE
29 LANCASTER NE
30 BREMEN NW
31 BREMEN NE

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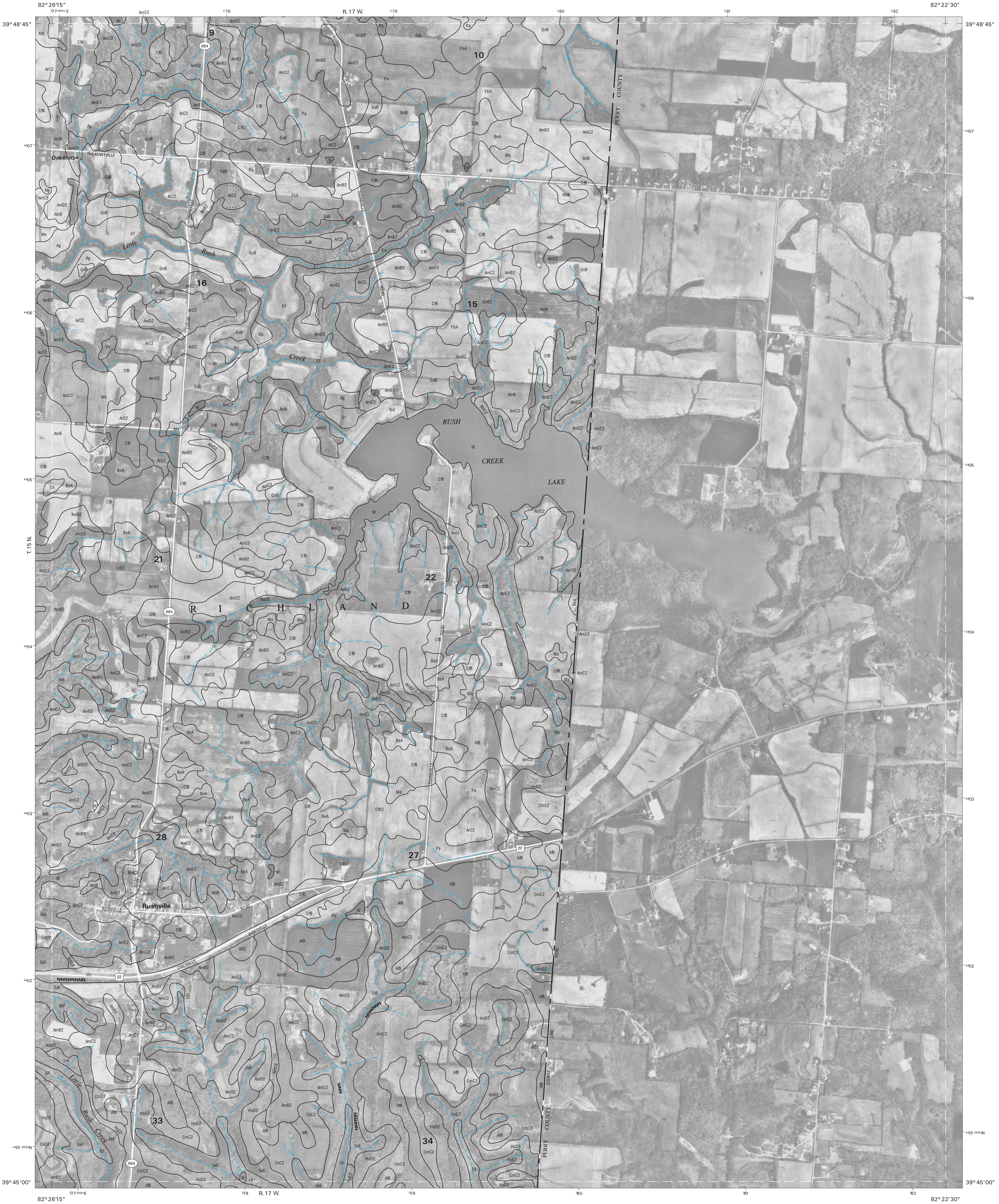
RUSHVILLE SW, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 22 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
RUSHVILLE SE QUADRANGLE
SHEET NUMBER 23 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

14	15	
22		
30	31	32

14 RUSHVILLE NW
15 RUSHVILLE NE
22 RUSHVILLE SW
30 BREMEN NW
31 BREMEN NE
32 JUNCTION CITY NW

INDEX TO ADJOINING 3.75 MAPS

RUSHVILLE SE, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 23 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 17.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

	16	17
	■	25
	33	34

16 CANAL WINCHESTER SW
17 CANAL WINCHESTER SE
25 EAST RINGGOLD NE
33 EAST RINGGOLD SW
34 EAST RINGGOLD SE

INDEX TO ADJOINING 3.75 MAPS

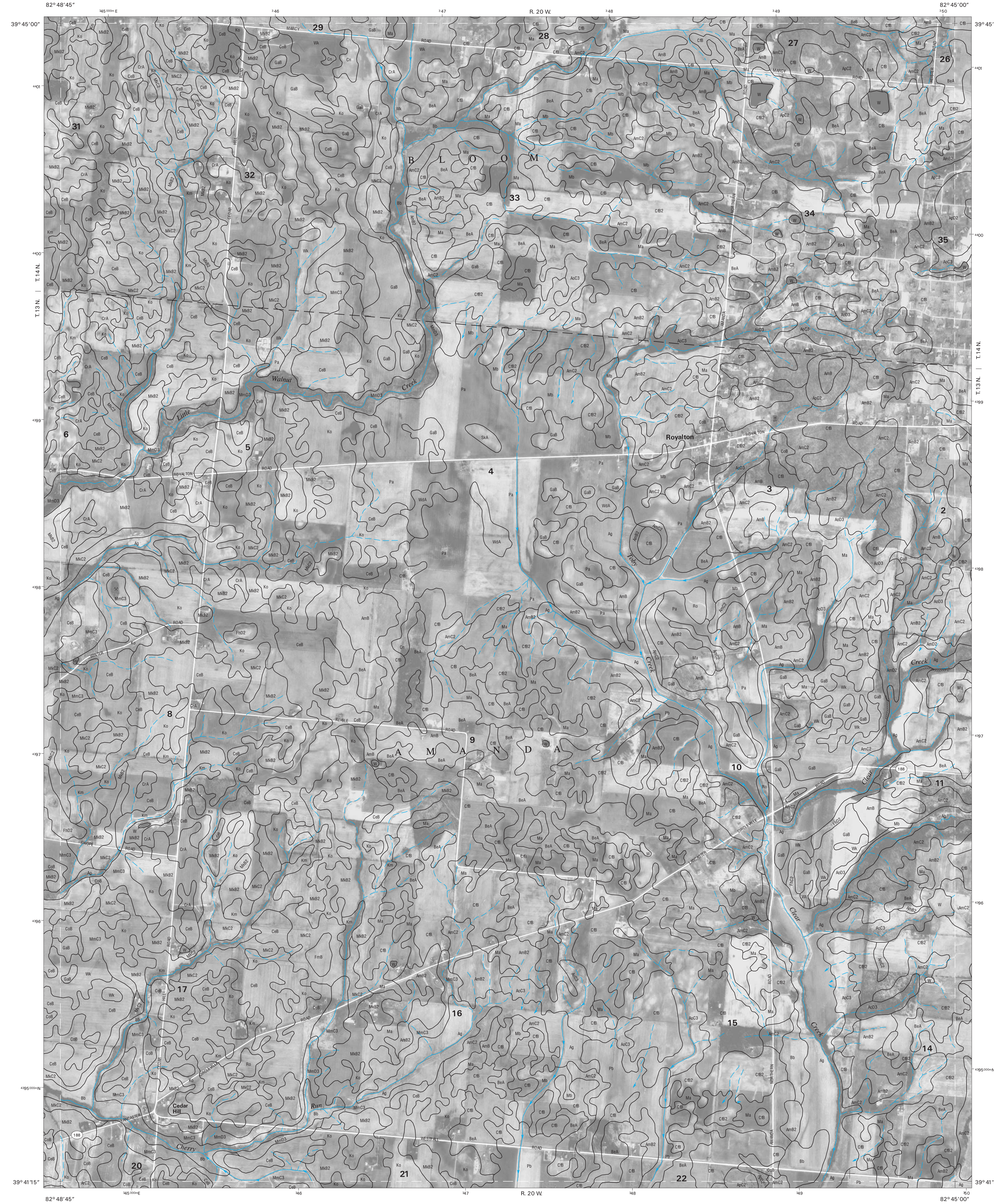
EAST RINGGOLD NW, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 24 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
EAST RINGGOLD NE QUADRANGLE
SHEET NUMBER 25 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

16	17	18
24		26
33	34	35

16 CANAL WINCHESTER SW
17 CANAL WINCHESTER SE
18 CARROLL SW
24 EAST RINGGOLD NW
26 AMANDA NW
33 EAST RINGGOLD SW
34 EAST RINGGOLD SE
35 AMANDA SW

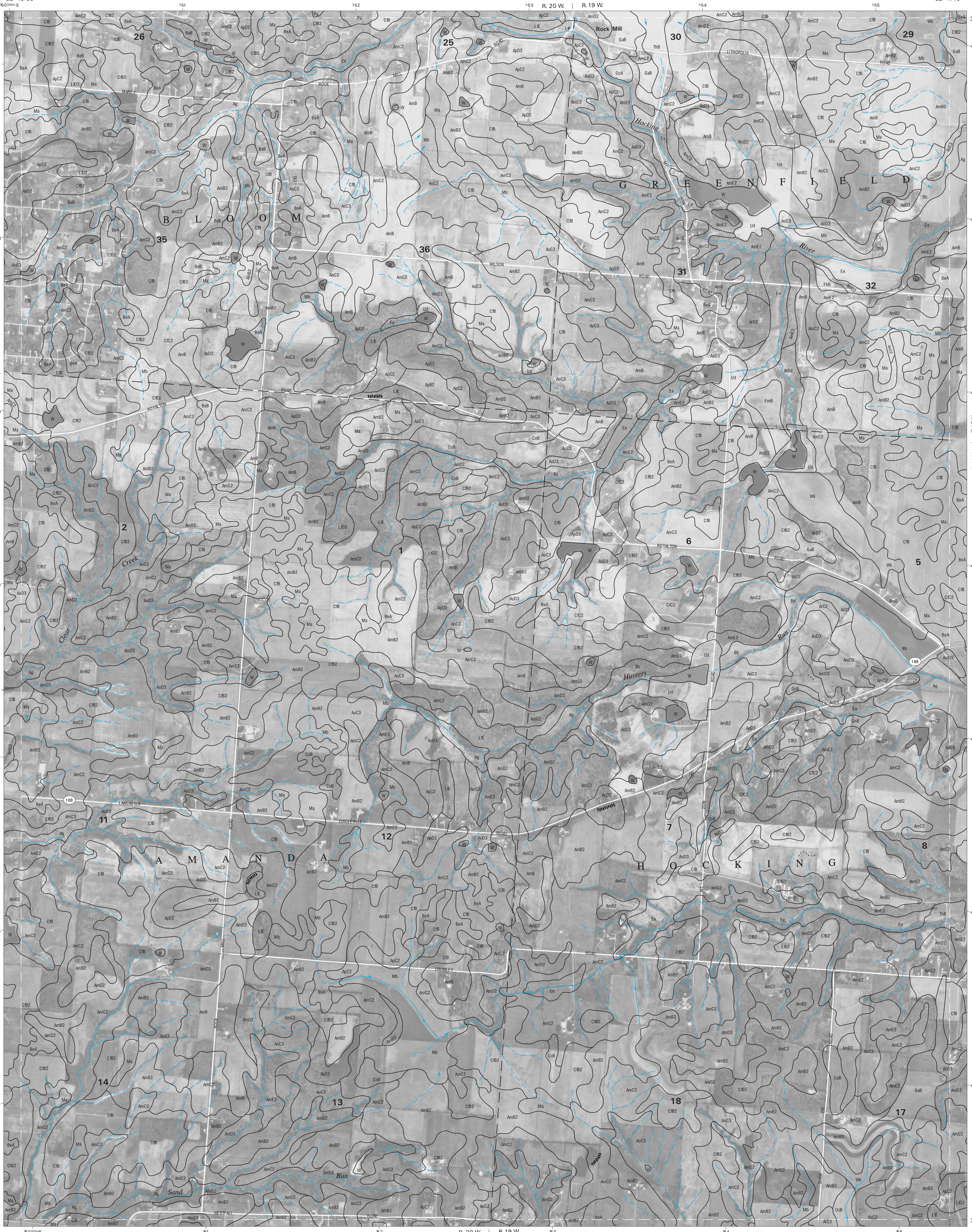
INDEX TO ADJOINING 3.75 MAPS

EAST RINGGOLD NE, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 25 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
AMANDA NW QUADRANGLE
SHEET NUMBER 26 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

17	18	19
25		27
34	35	36

17 CANAL WINCHESTER SE
18 CARROLL SW
19 CARROLL SE
25 EAST RINGGOLD NE
27 AMANDA NE
34 EAST RINGGOLD SE
35 AMANDA SW
36 AMANDA SE

INDEX TO ADJOINING 3.75 MAPS

AMANDA NW, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 26 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
AMANDA NE QUADRANGLE
SHEET NUMBER 27 OF 51

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

18	19	20
26		28
35	36	37

18 CARROLL SW
19 CARROLL SE
20 BALTIMORE SW
26 AMANDA NW
28 LANCASTER NW
35 AMANDA SW
36 AMANDA SE
37 LANCASTER SW

INDEX TO ADJOINING 3.75 MAPS

AMANDA NE, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 27 OF 51

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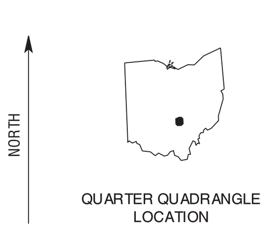


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

19	20	21
27		29
36	37	38

19 CARROLL SE
20 BALTIMORE SW
21 BALTIMORE SE
27 AMANDA NE
29 LANCASTER NE
36 AMANDA SE
37 LANCASTER SW
38 LANCASTER SE

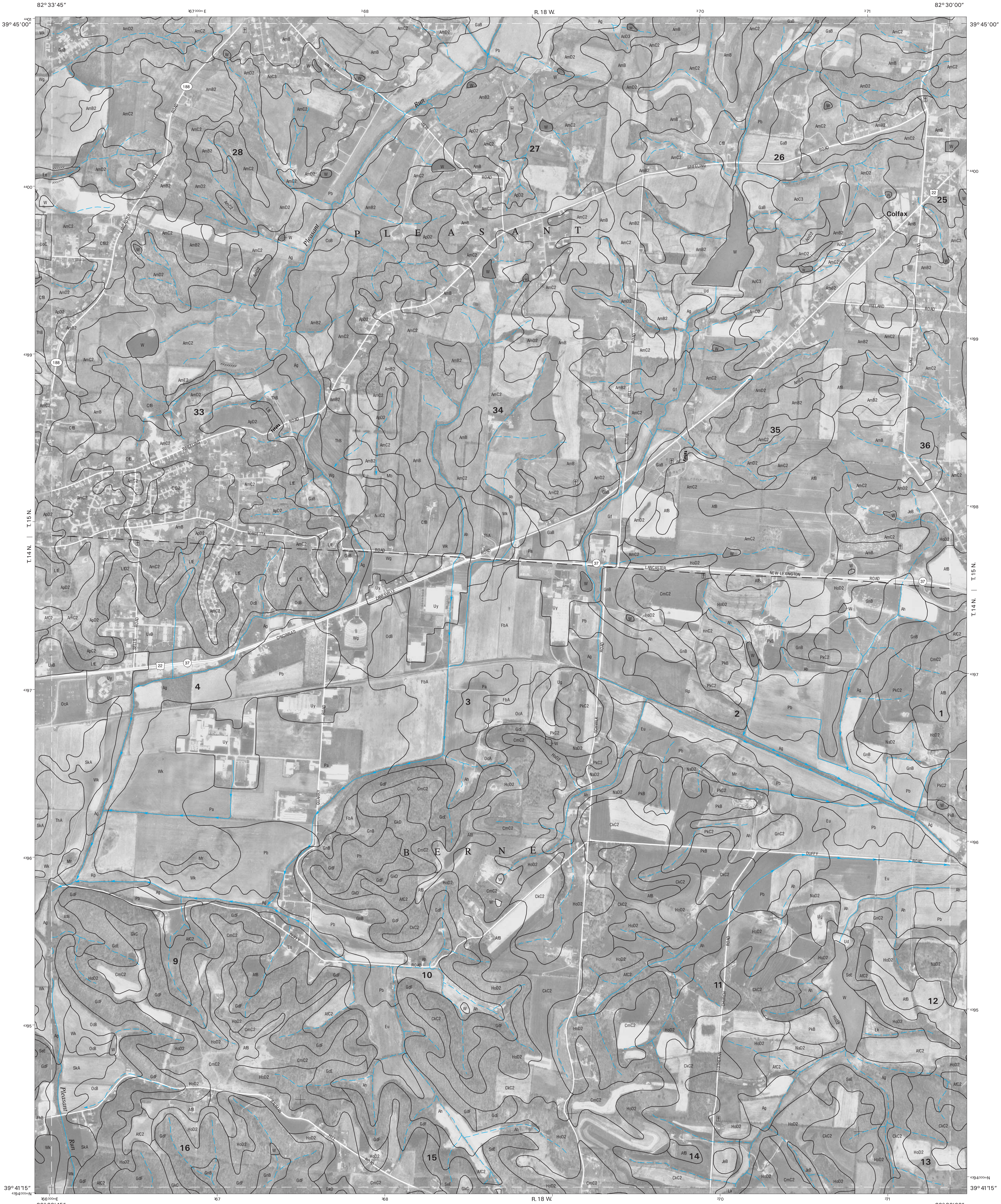
INDEX TO ADJOINING 3.75 MAPS

LANCASTER NW, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 28 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
LANCASTER NE QUADRANGLE
SHEET NUMBER 29 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

20	21	22
28		30
37	38	39

20 BALTIMORE SW
21 BALTIMORE SE
22 RUSHVILLE SW
28 LANCASTER NW
30 BREMEN NW
37 LANCASTER SW
38 LANCASTER SE
39 BREMEN SW

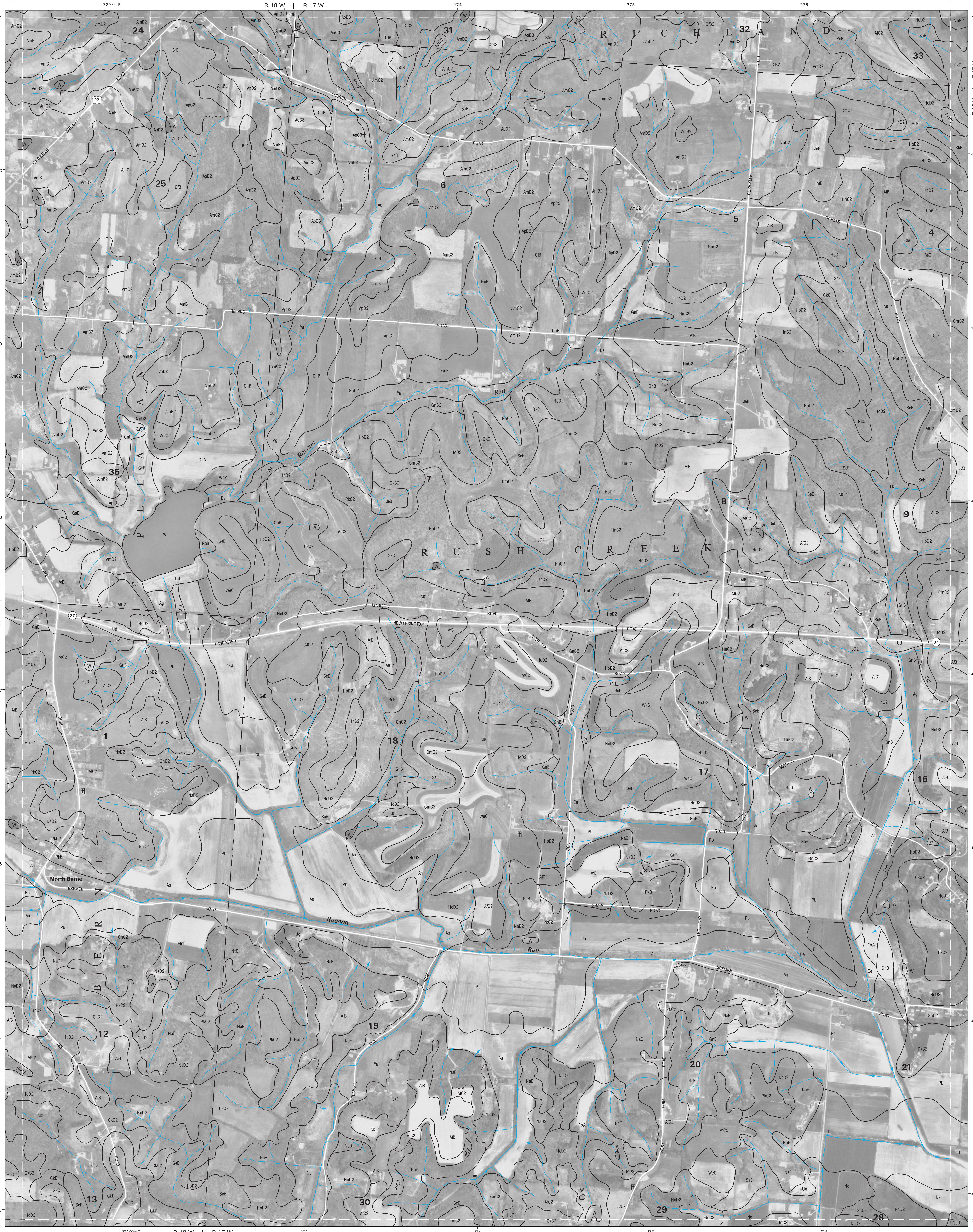
INDEX TO ADJOINING 3.75' MAPS

LANCASTER NE, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 29 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
BREMEN NW QUADRANGLE
SHEET NUMBER 30 OF 51



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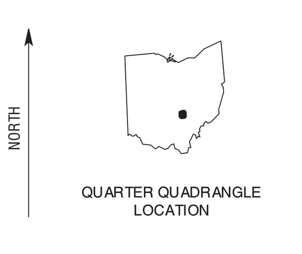

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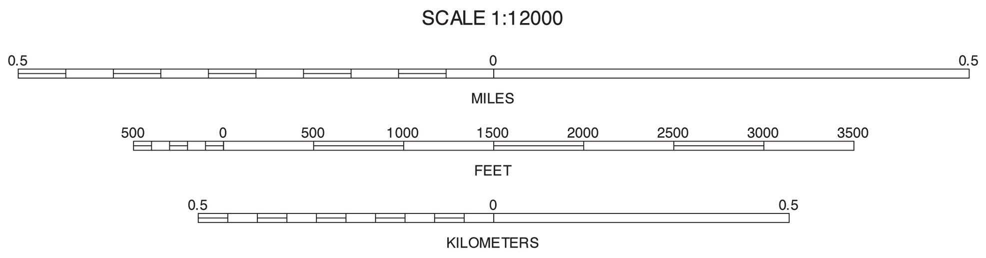


21	22	23
29		31
38	39	40

21 BALTIMORE SE
22 RUSHVILLE SW
23 RUSHVILLE SE
29 LANCASTER NE
31 BREMEN NE
38 LANCASTER SE
39 BREMEN SW
40 BREMEN SE

INDEX TO ADJOINING 3.75 MAPS

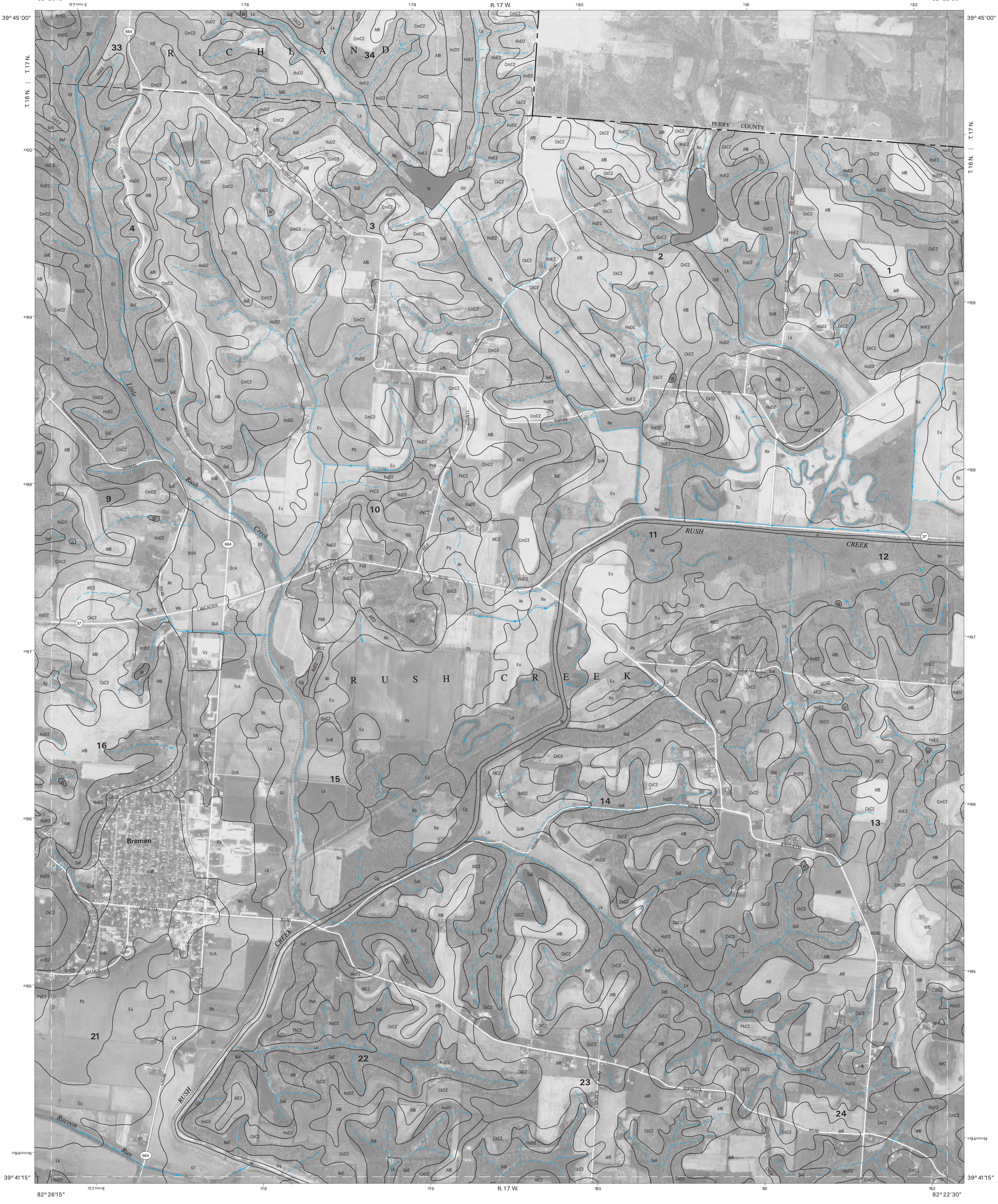
BREMEN NW, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 30 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
BREMEN NE QUADRANGLE
SHEET NUMBER 31 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

22	23	
30		32
39	40	41

22 RUSHVILLE SW
23 RUSHVILLE SE

30 BREMEN NW
32 JUNCTION CITY NW
39 BREMEN SW
40 BREMEN SE
41 JUNCTION CITY SW

INDEX TO ADJOINING 3.75 MAPS

BREMEN NE, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 31 OF 51

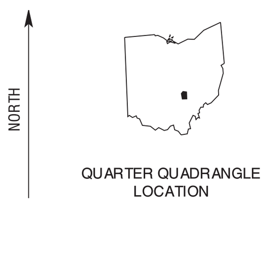
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

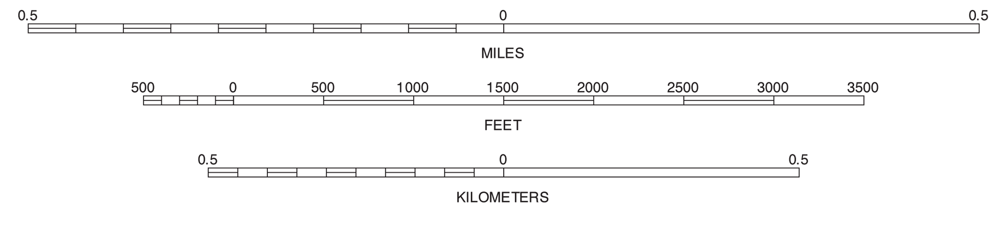
FAIRFIELD COUNTY, OHIO
JUNCTION CITY NW QUADRANGLE
SHEET NUMBER 32 OF 51

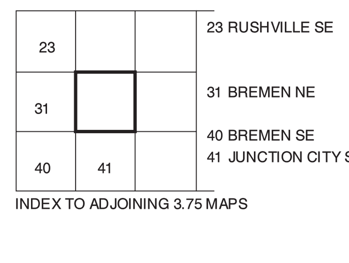
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



SCALE 1:12000



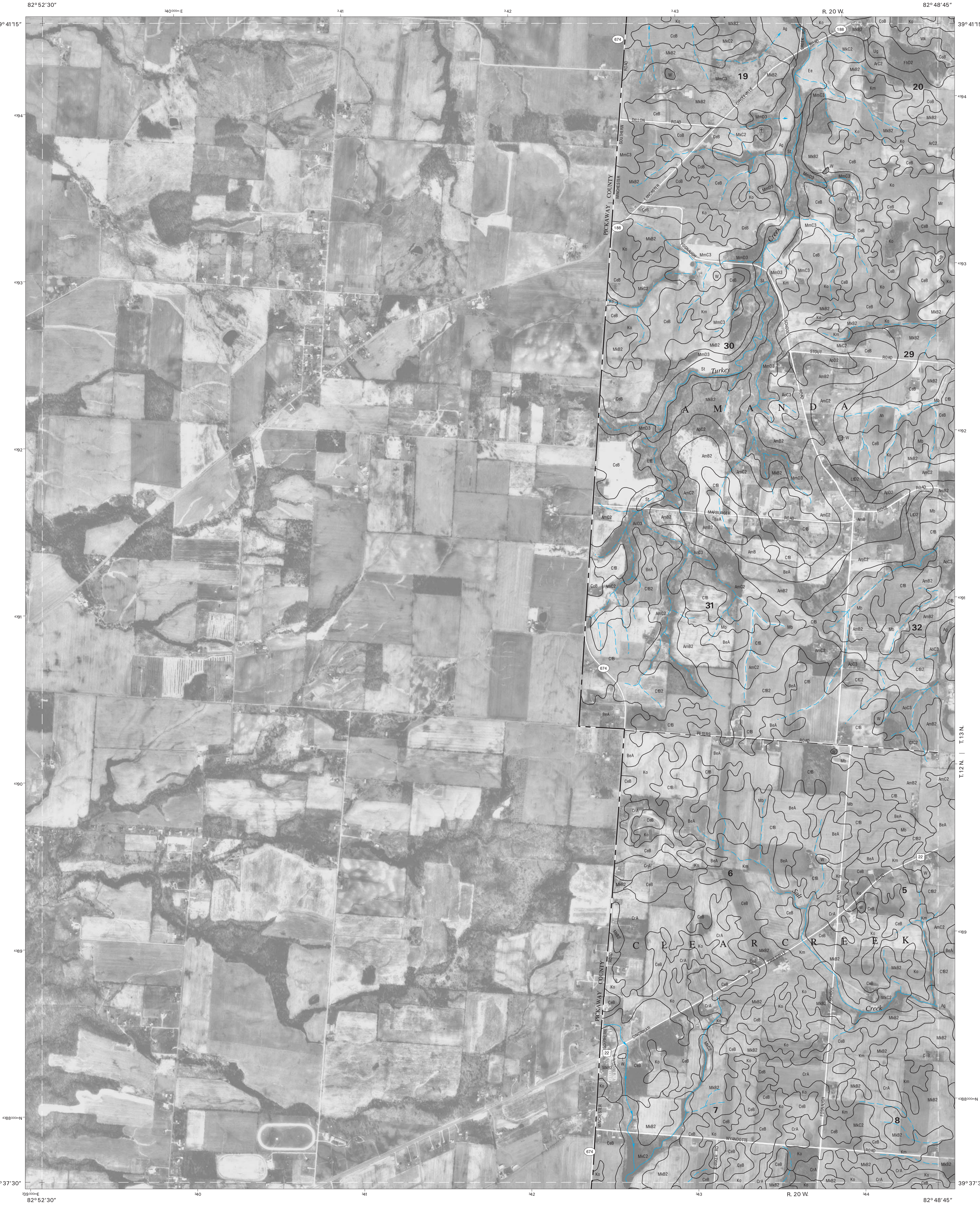


JUNCTION CITY NW, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 32 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
EAST RINGGOLD SW QUADRANGLE
SHEET NUMBER 33 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES (0.5 — 0 — 0.5)

FEET (500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500)

KILOMETERS (0.5 — 0 — 0.5)

	24	25
	■	34
	42	43

24 EAST RINGGOLD NW
25 EAST RINGGOLD NE
34 EAST RINGGOLD SE
42 STOUTSVILLE NW
43 STOUTSVILLE NE

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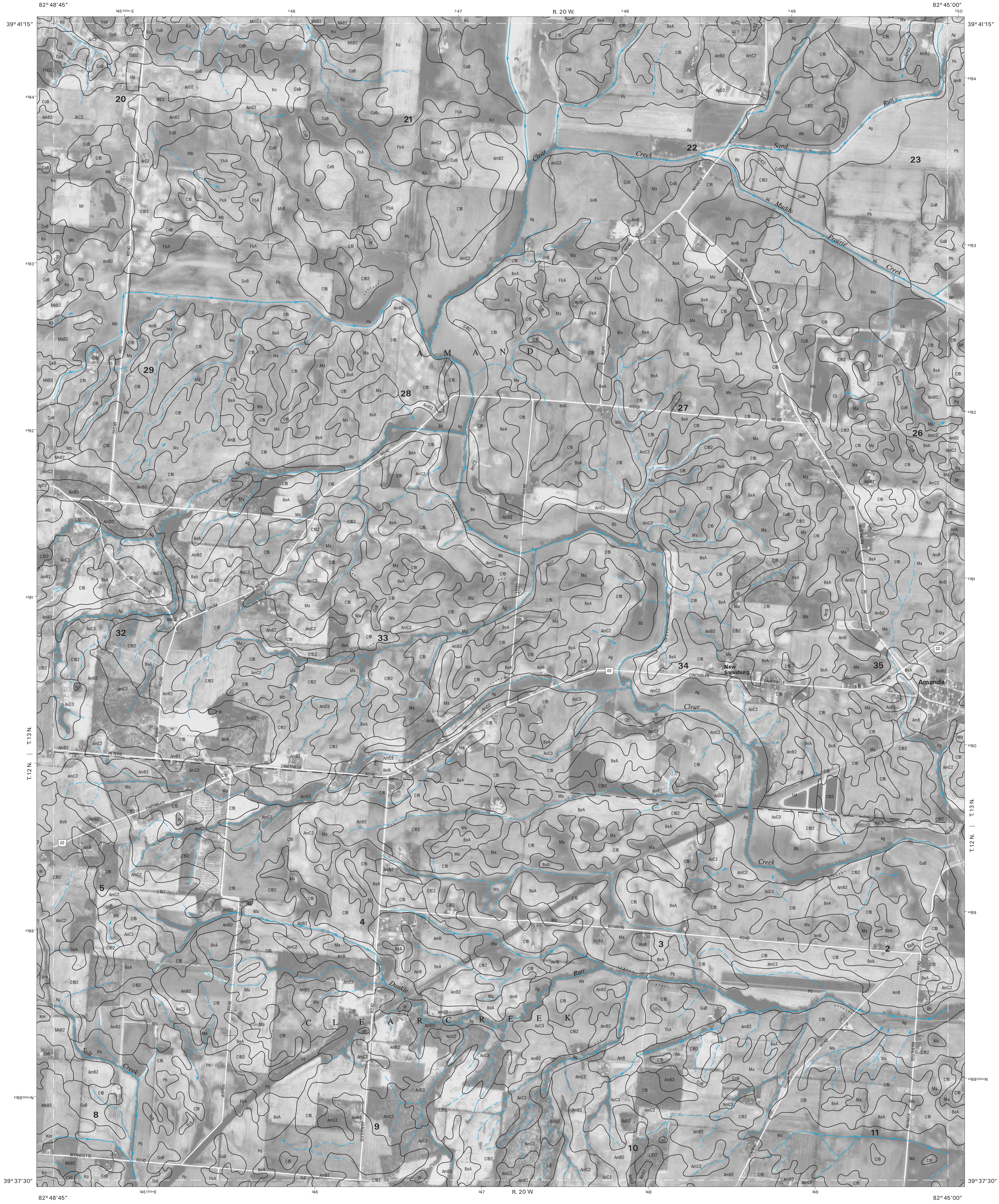
EAST RINGGOLD SW, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 33 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
EAST RINGGOLD SE QUADRANGLE
SHEET NUMBER 34 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

24	25	26
33		35
42	43	44

24 EAST RINGGOLD NW
25 EAST RINGGOLD NE
26 AMANDA NW
33 EAST RINGGOLD SW
35 AMANDA SW
42 STOUTSVILLE NW
43 STOUTSVILLE NE
44 CLEARPORT NW

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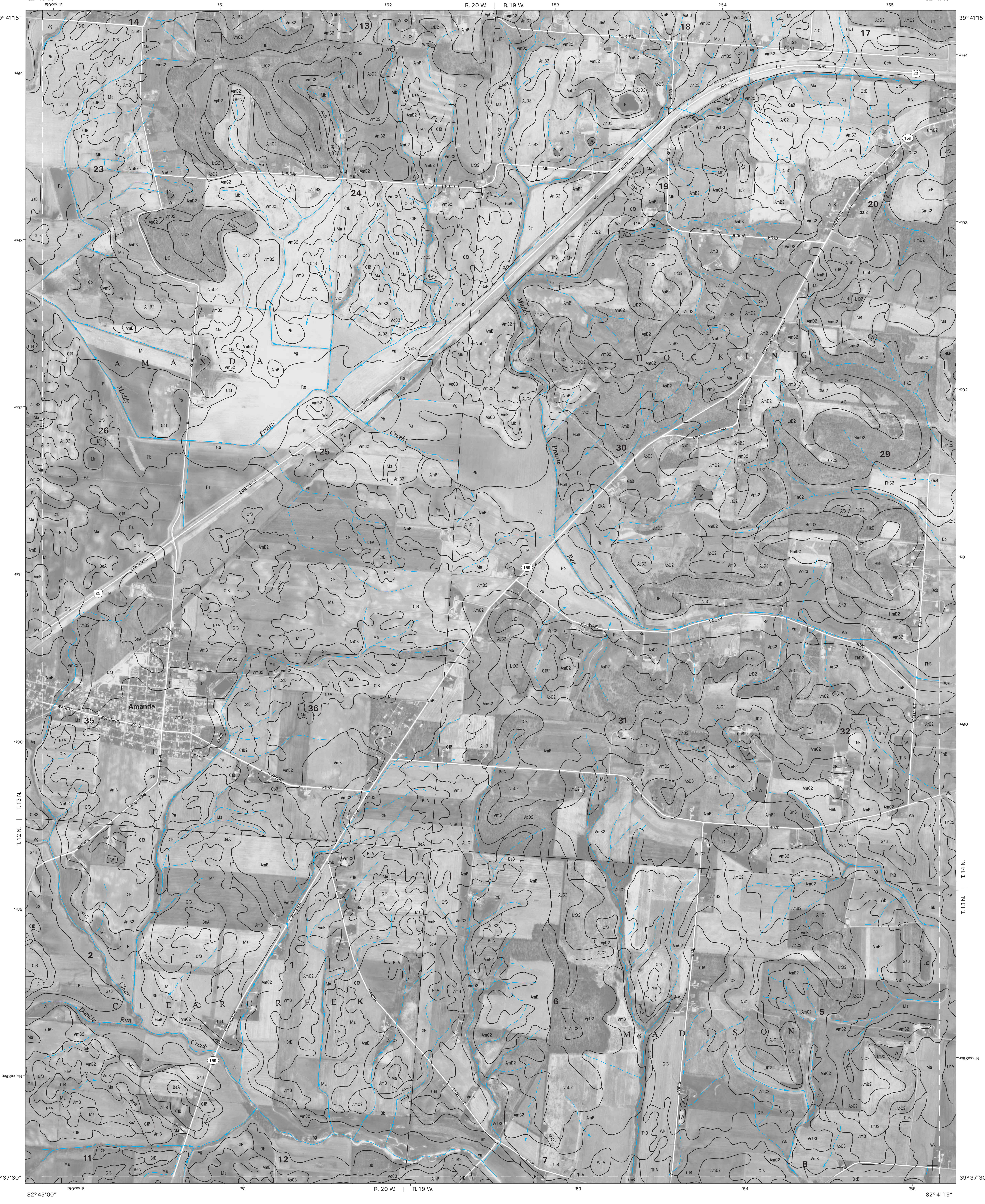
EAST RINGGOLD SE, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 34 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

25	26	27
34		36
43	44	45

25 EAST RINGGOLD NE
26 AMANDA NW
27 AMANDA NE
34 EAST RINGGOLD SE
36 AMANDA SE
43 STOUTSVILLE NE
44 CLEARPORT NW
45 CLEARPORT NE

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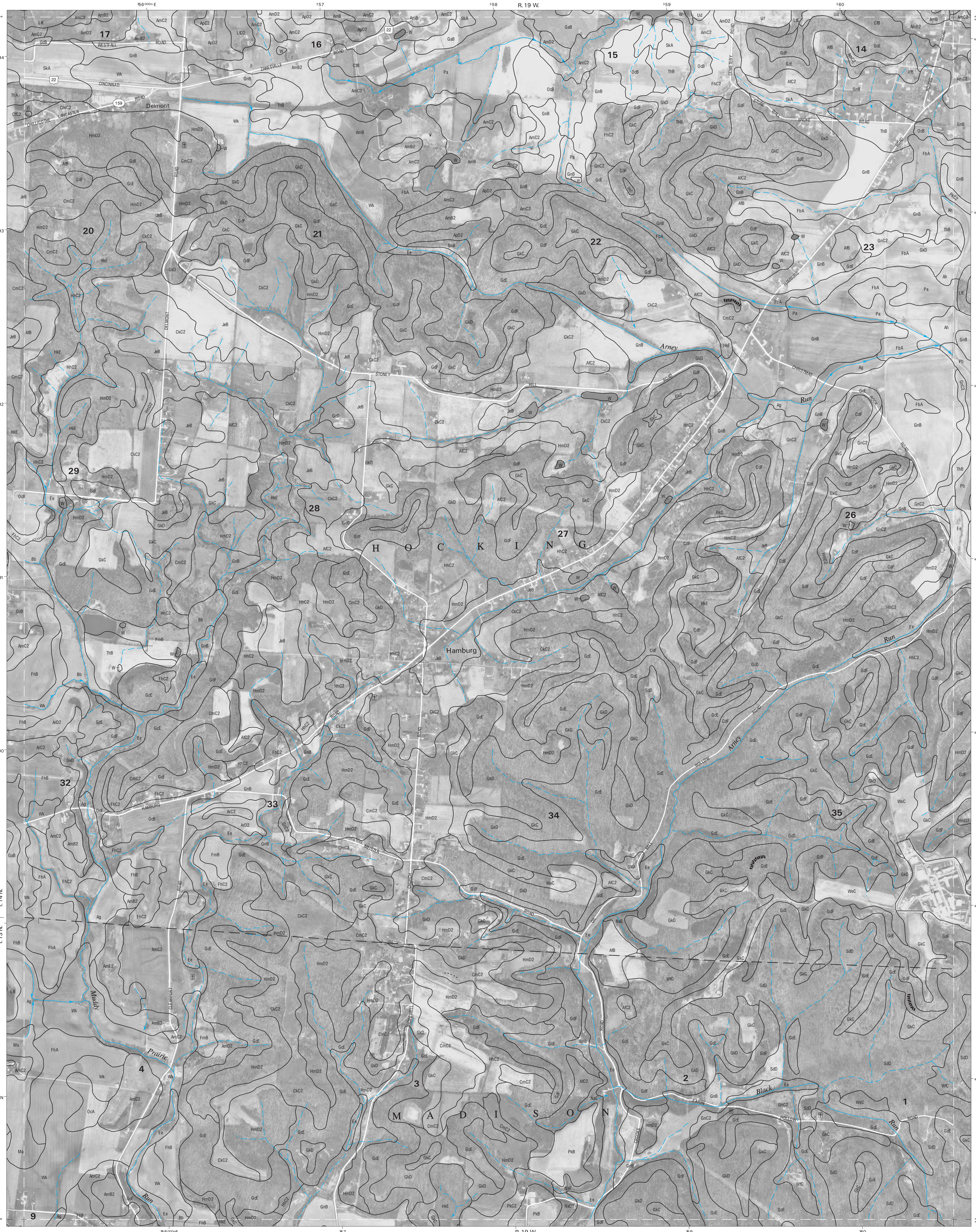
AMANDA SW, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 35 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



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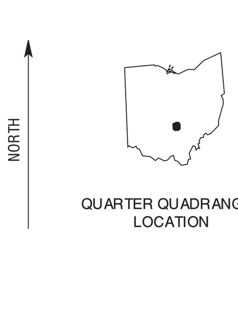
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 – 0 – 0.5

FEET: 500 – 0 – 500 – 1000 – 1500 – 2000 – 2500 – 3000 – 3500

KILOMETERS: 0.5 – 0 – 0.5

26	27	28
35		37
44	45	46

26 AMANDA NW
27 AMANDA NE
28 LANCASTER NW
35 AMANDA SW
37 LANCASTER SW
44 CLEARPORT NW
45 CLEARPORT NE
46 ROCKBRIDGE NW

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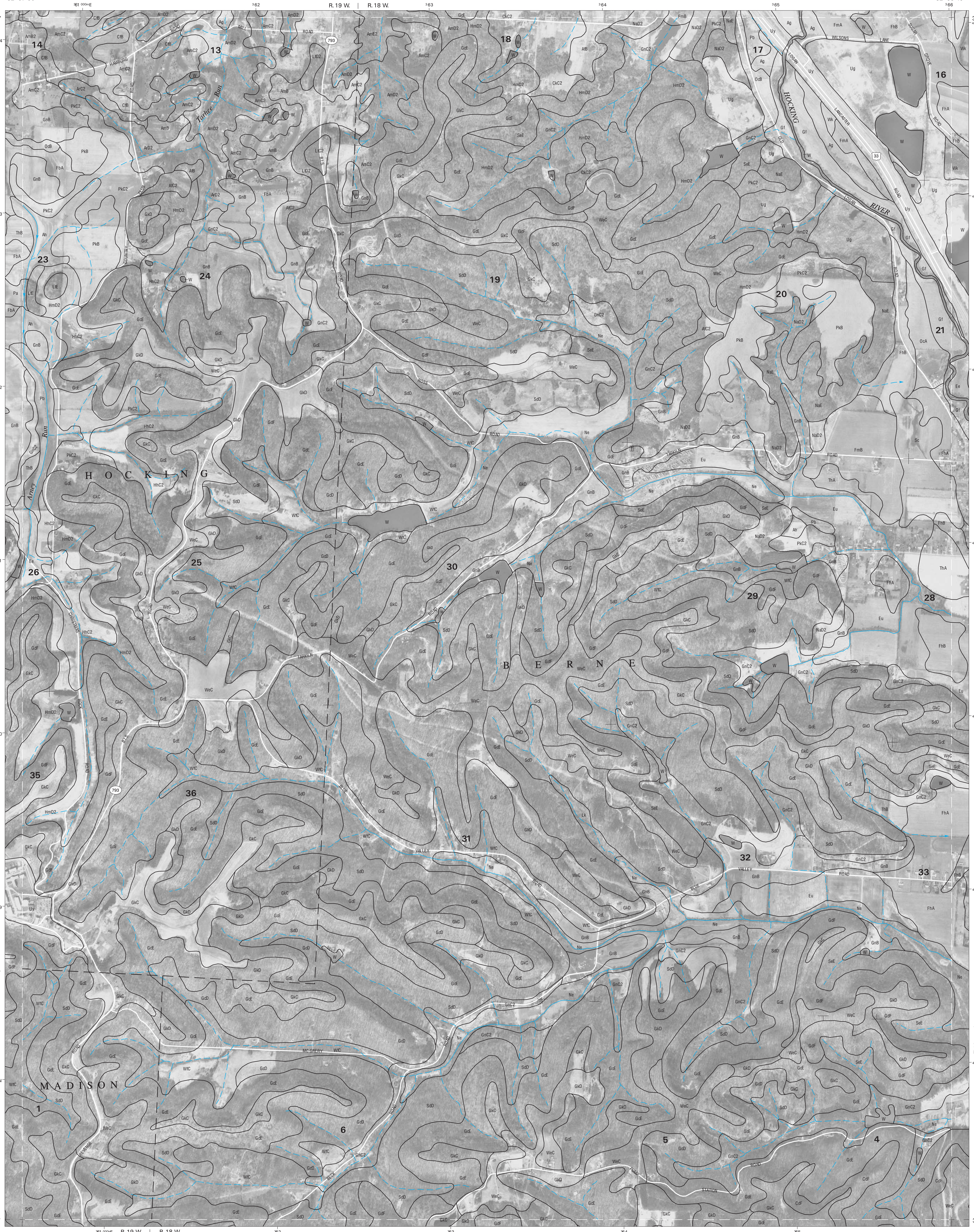
AMANDA SE, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 36 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
LANCASTER SW QUADRANGLE
SHEET NUMBER 37 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

27	28	29
36		38
45	46	47

27 AMANDA NE
28 LANCASTER NW
29 LANCASTER NE
36 AMANDA SE
38 LANCASTER SE
45 CLEARPORT NE
46 ROCKBRIDGE NW
47 ROCKBRIDGE NE

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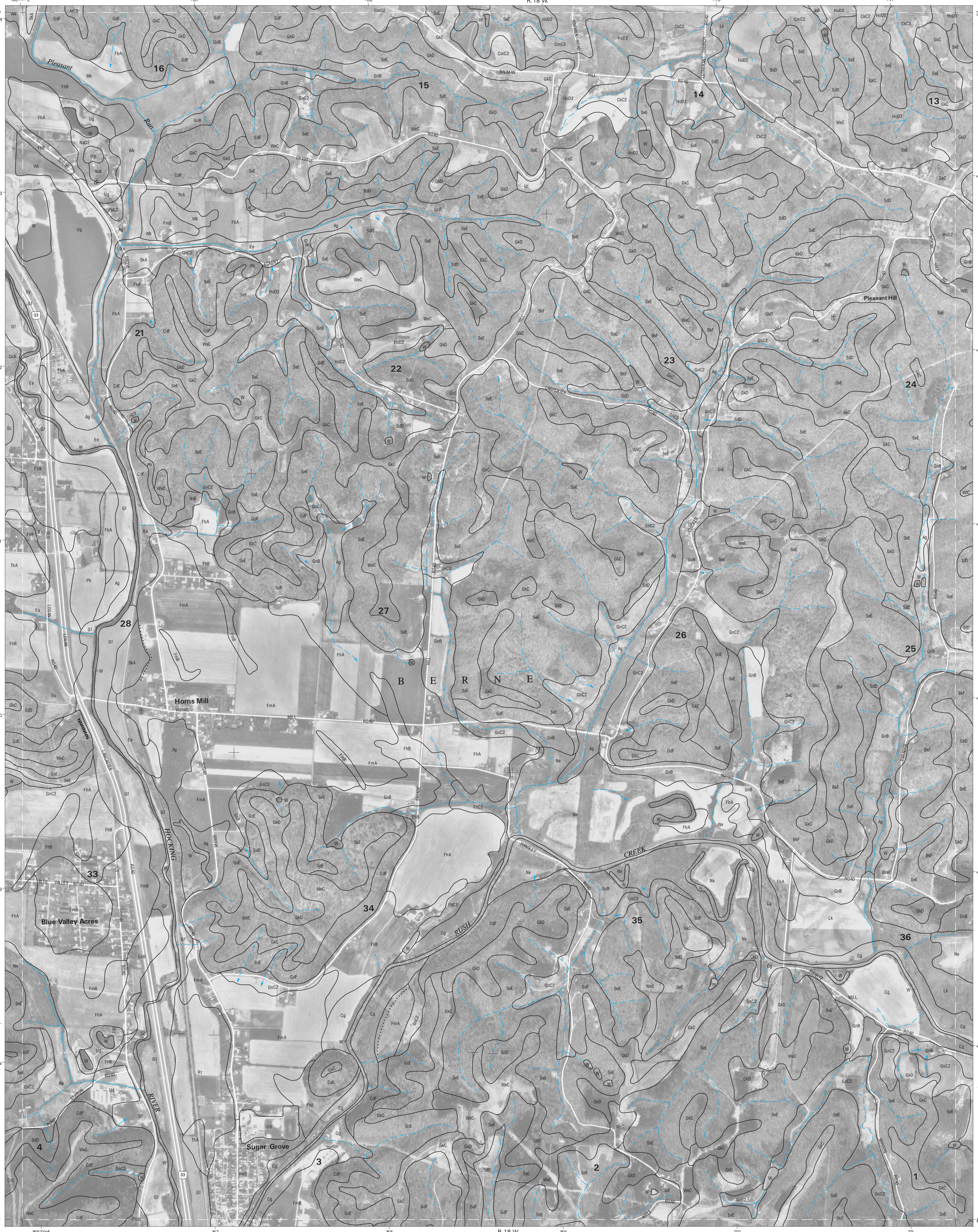
LANCASTER SW, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 37 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
LANCASTER SE QUADRANGLE
SHEET NUMBER 38 OF 51



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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

28	29	30
37		39
46	47	48

28 LANCASTER NW
29 LANCASTER NE
30 BREMEN NW
37 LANCASTER SW
39 BREMEN SW
46 ROCKBRIDGE NW
47 ROCKBRIDGE NE
48 LOGAN NW

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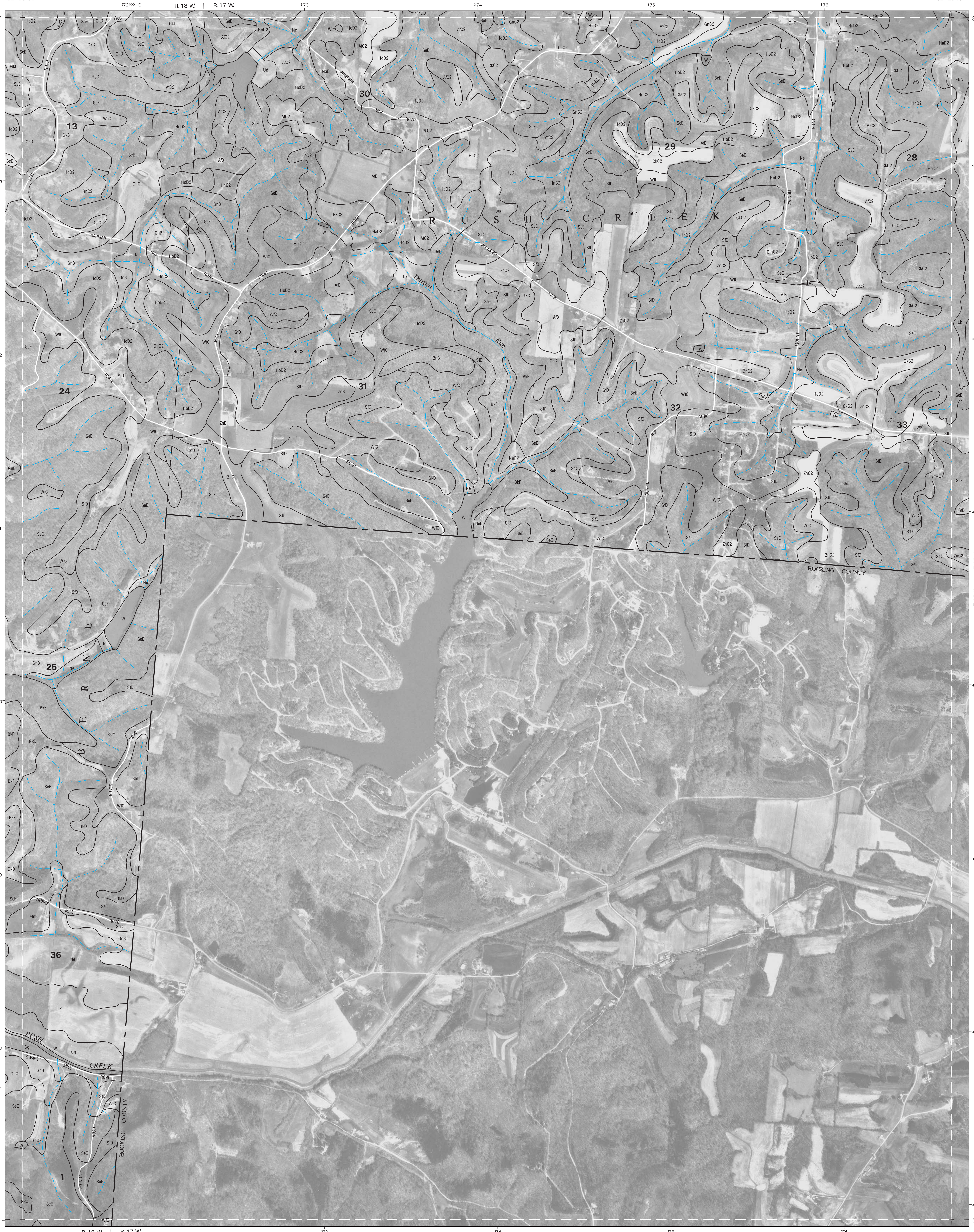
LANCASTER SE, OHIO
3.75 MINUTE SERIES
SHEET NUMBER 38 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



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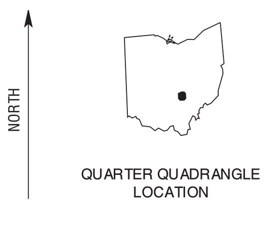
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

29	30	31
38		40
47	48	

29 LANCASTER NE
30 BREMEN NW
31 BREMEN NE
38 LANCASTER SE
40 BREMEN SE
47 ROCKBRIDGE NE
48 LOGAN NW

INDEX TO ADJOINING 3.75 MAPS

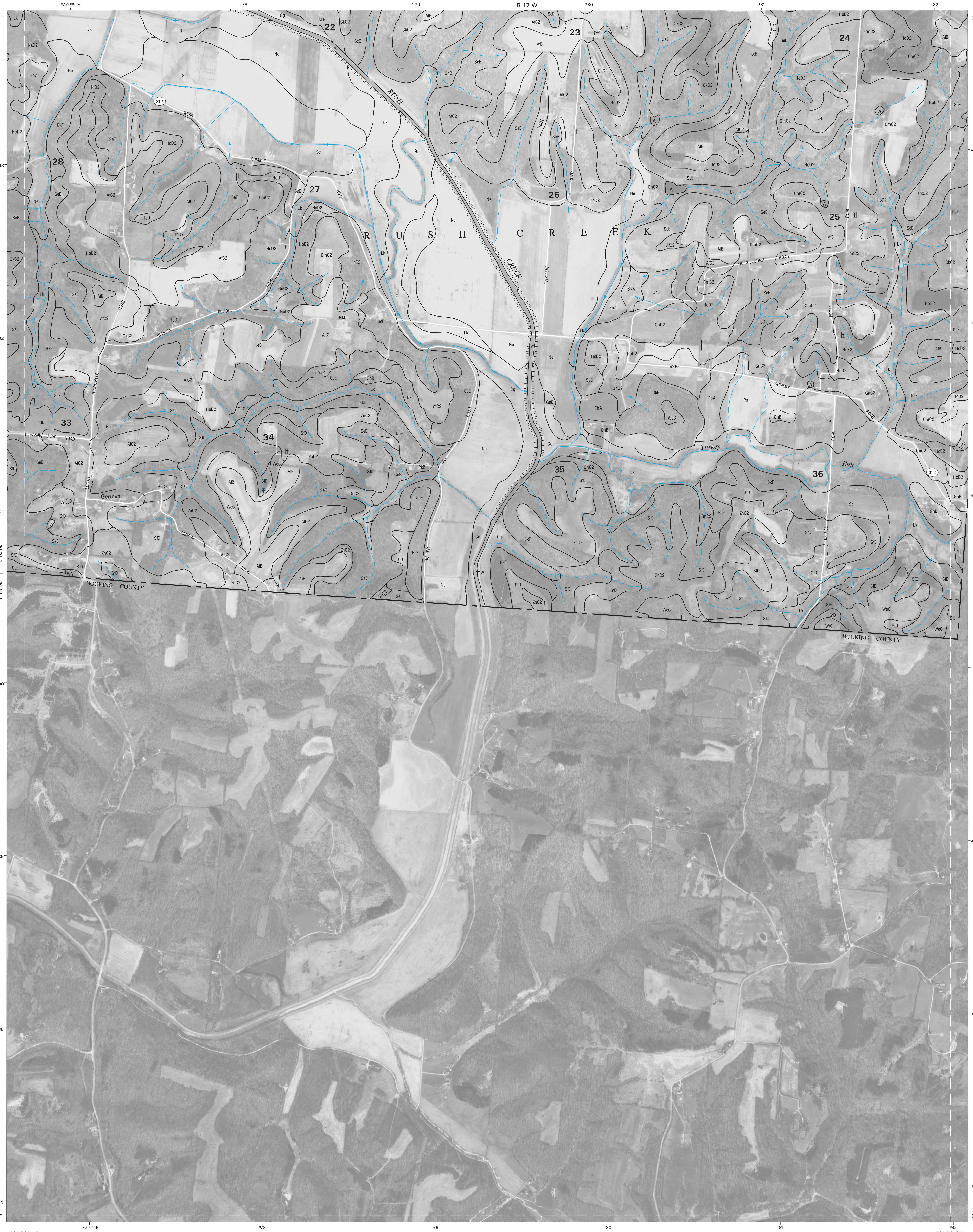
BREMEN SW, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 39 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FAIRFIELD COUNTY, OHIO
BREMEN SE QUADRANGLE
SHEET NUMBER 40 OF 51



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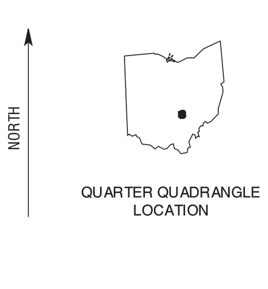
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

30	31	32
39		41
48		

30 BREMEN NW
31 BREMEN NE
32 JUNCTION CITY NW
39 BREMEN SW
41 JUNCTION CITY SW
48 LOGAN NW

INDEX TO ADJOINING 3.75 MAPS

BREMEN SE, OHIO
3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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DEPARTMENT OF AGRICULTURE
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FAIRFIELD COUNTY, OHIO
JUNCTION CITY SW QUADRANGLE
SHEET NUMBER 41 OF 51

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 17.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

31	32	
40		

31 BREMEN NE
32 JUNCTION CITY NW
40 BREMEN SE

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JUNCTION CITY SW, OHIO
3.75 MINUTE SERIES
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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

33	34	
		43
49	50	

33 EAST RINGGOLD SW
34 EAST RINGGOLD SE
43 STOUTSVILLE NE
49 STOUTSVILLE SW
50 STOUTSVILLE SE

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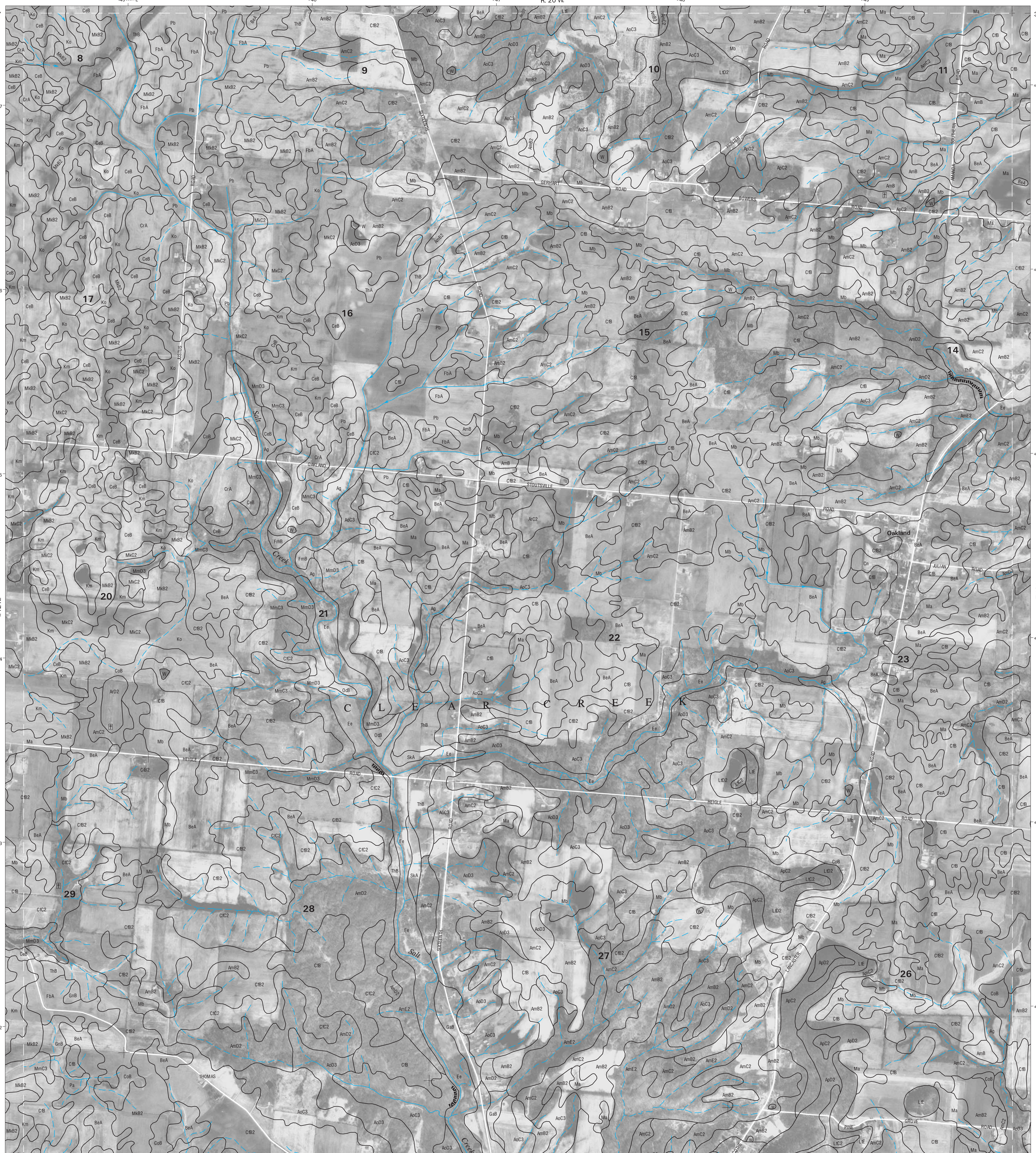
STOUTSVILLE NW, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 42 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

82° 48′45″ 82° 45′00″
39° 37′30″ 39° 37′30″



39° 33′45″ 39° 33′45″
82° 48′45″ R. 20 W. 82° 45′00″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:12000

33	34	35
42		44
49	50	51

33 EAST RINGGOLD SW
34 EAST RINGGOLD SE
35 AMANDA SW
42 STOUTSVILLE NW
44 CLEARPORT NW
49 STOUTSVILLE SW
50 STOUTSVILLE SE
51 CLEARPORT SW

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STOUTSVILLE NE, OHIO
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SHEET NUMBER 43 OF 51

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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DEPARTMENT OF AGRICULTURE
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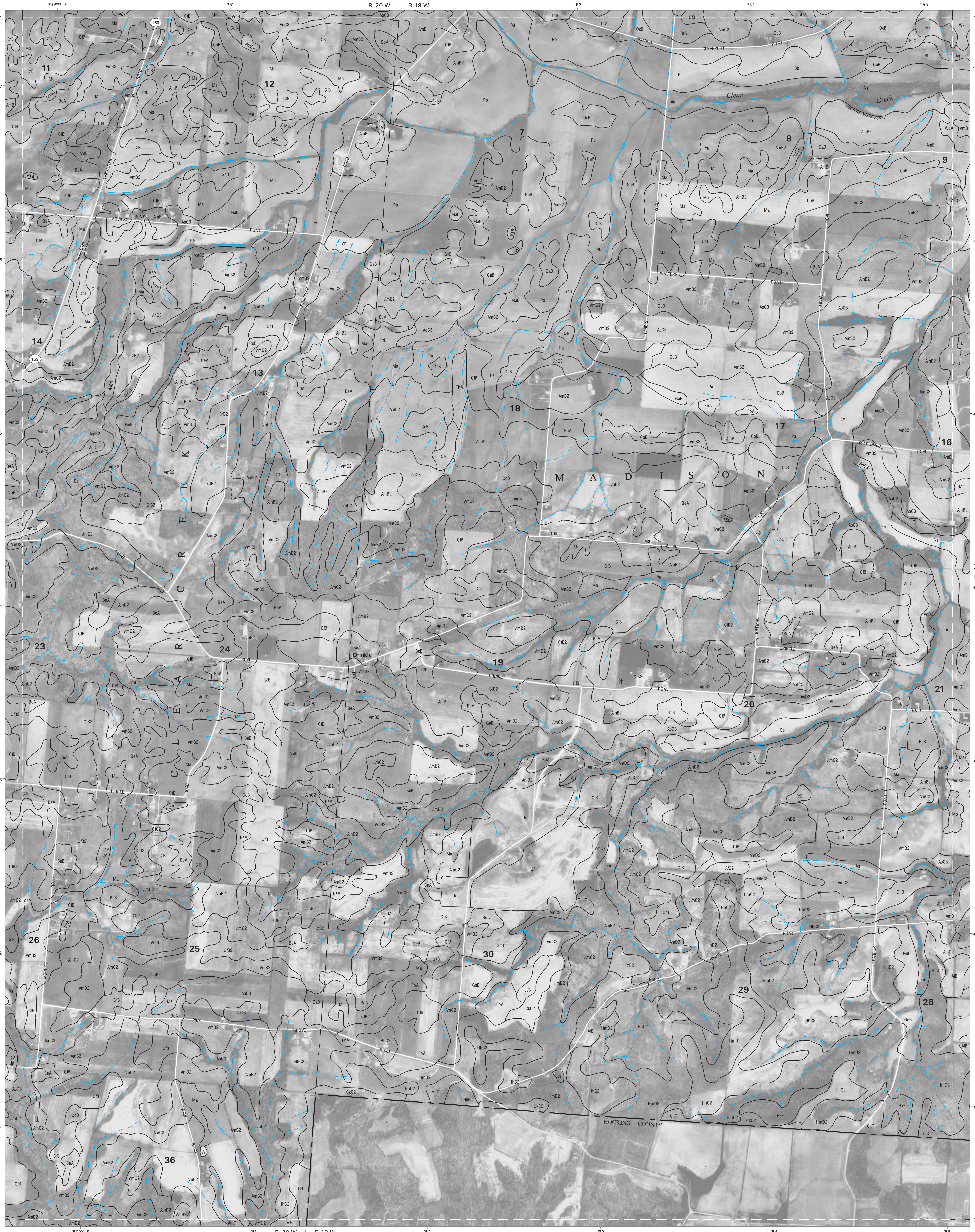
FAIRFIELD COUNTY, OHIO
CLEARPORT NW QUADRANGLE
SHEET NUMBER 44 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

34	35	36
43		45
50	51	

34 EAST RINGGOLD SE
35 AMANDA SW
36 AMANDA SE
43 STOUTSVILLE NE
45 CLEARPORT NE
50 STOUTSVILLE SE
51 CLEARPORT SW

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CLEARPORT NW, OHIO
3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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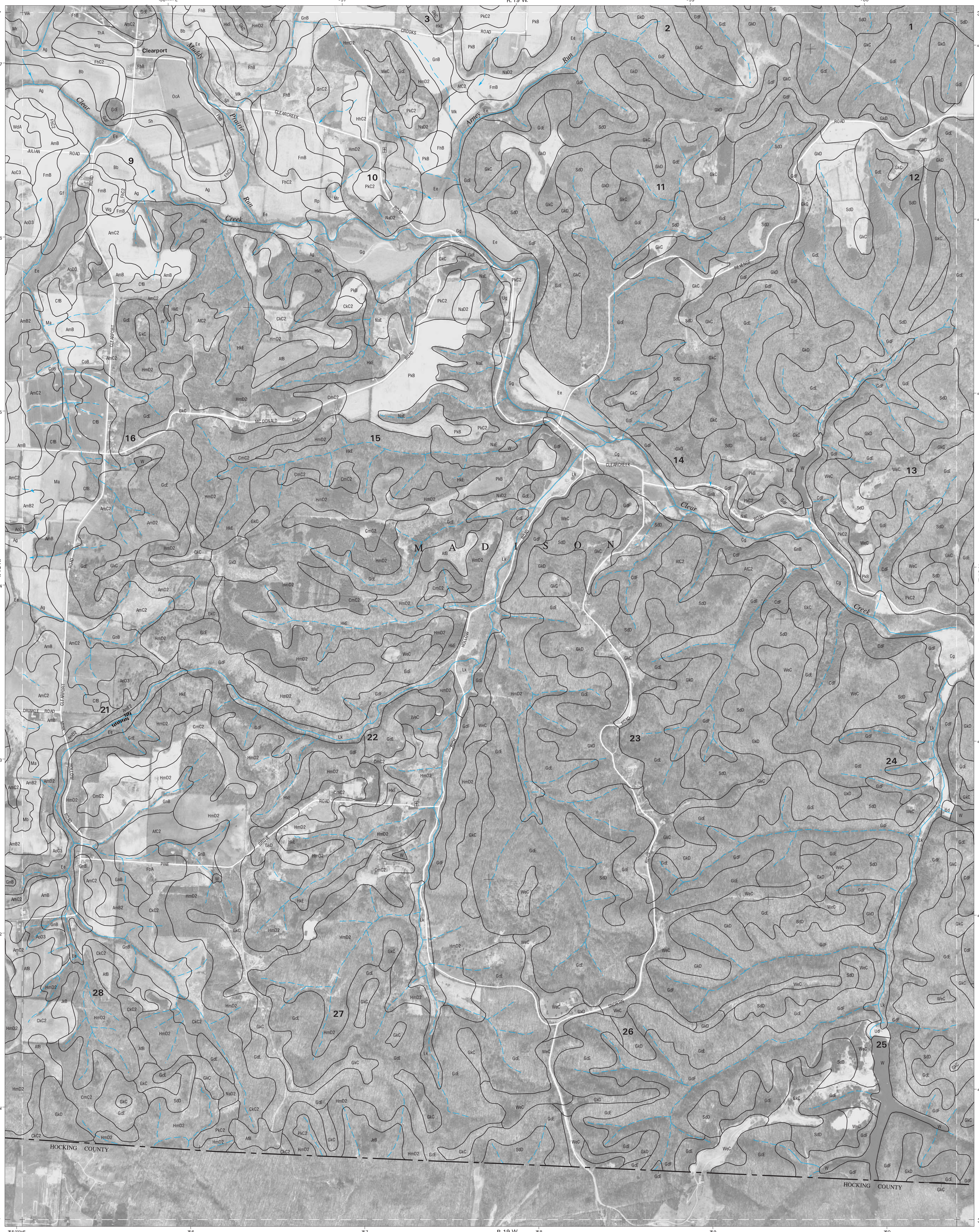
FAIRFIELD COUNTY, OHIO
CLEARPORT NE QUADRANGLE
SHEET NUMBER 45 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

35	36	37
44		46
51		

35 AMANDA SW
36 AMANDA SE
37 LANCASTER SW
44 CLEARPORT NW
46 ROCKBRIDGE NW
51 CLEARPORT SW

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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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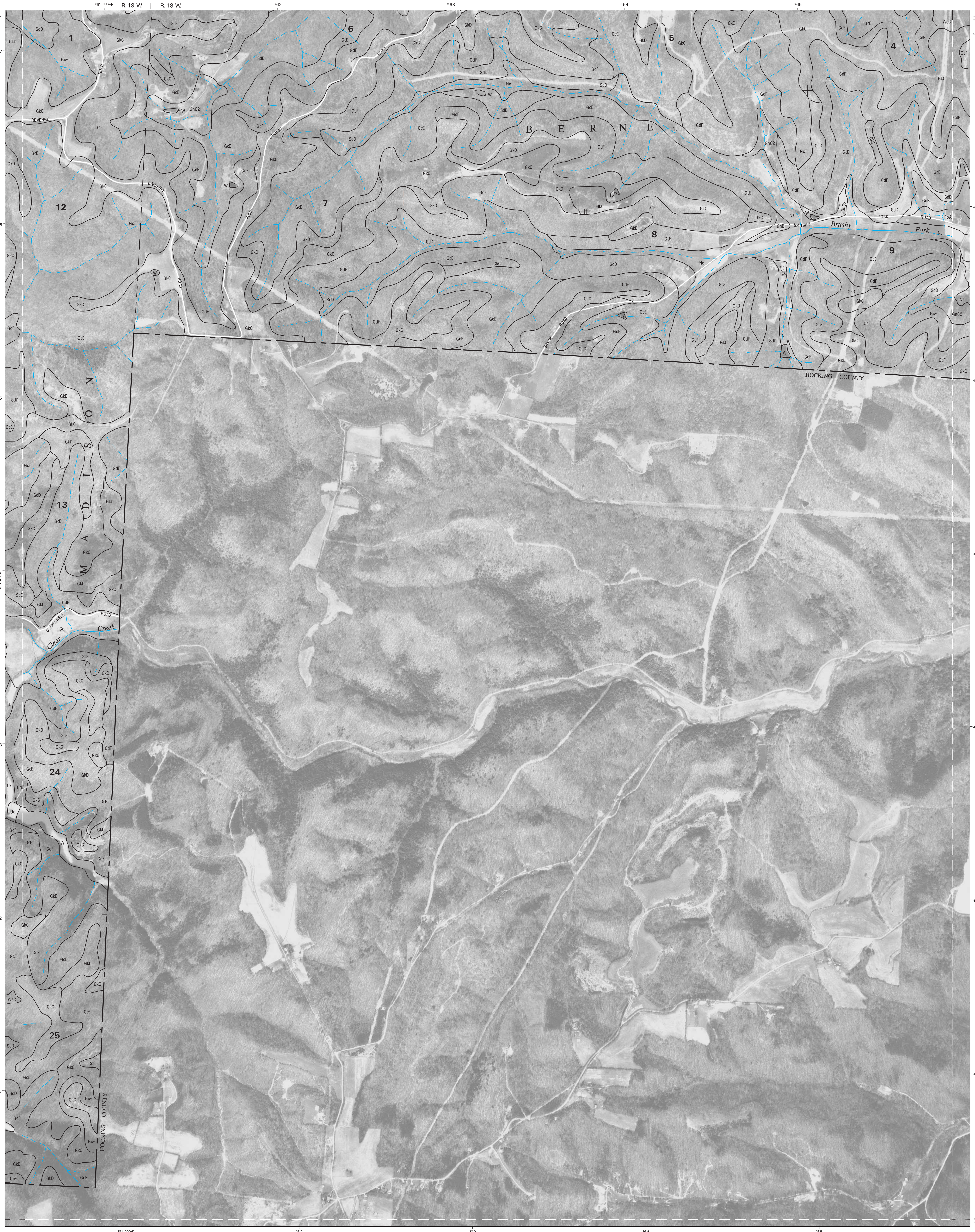
FAIRFIELD COUNTY, OHIO
ROCKBRIDGE NW QUADRANGLE
SHEET NUMBER 46 OF 51



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

36	37	38
45		47

36 AMANDA SE
37 LANCASTER SW
38 LANCASTER SE
45 CLEARPORT NE
47 ROCKBRIDGE NE

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ROCKBRIDGE NW, OHIO
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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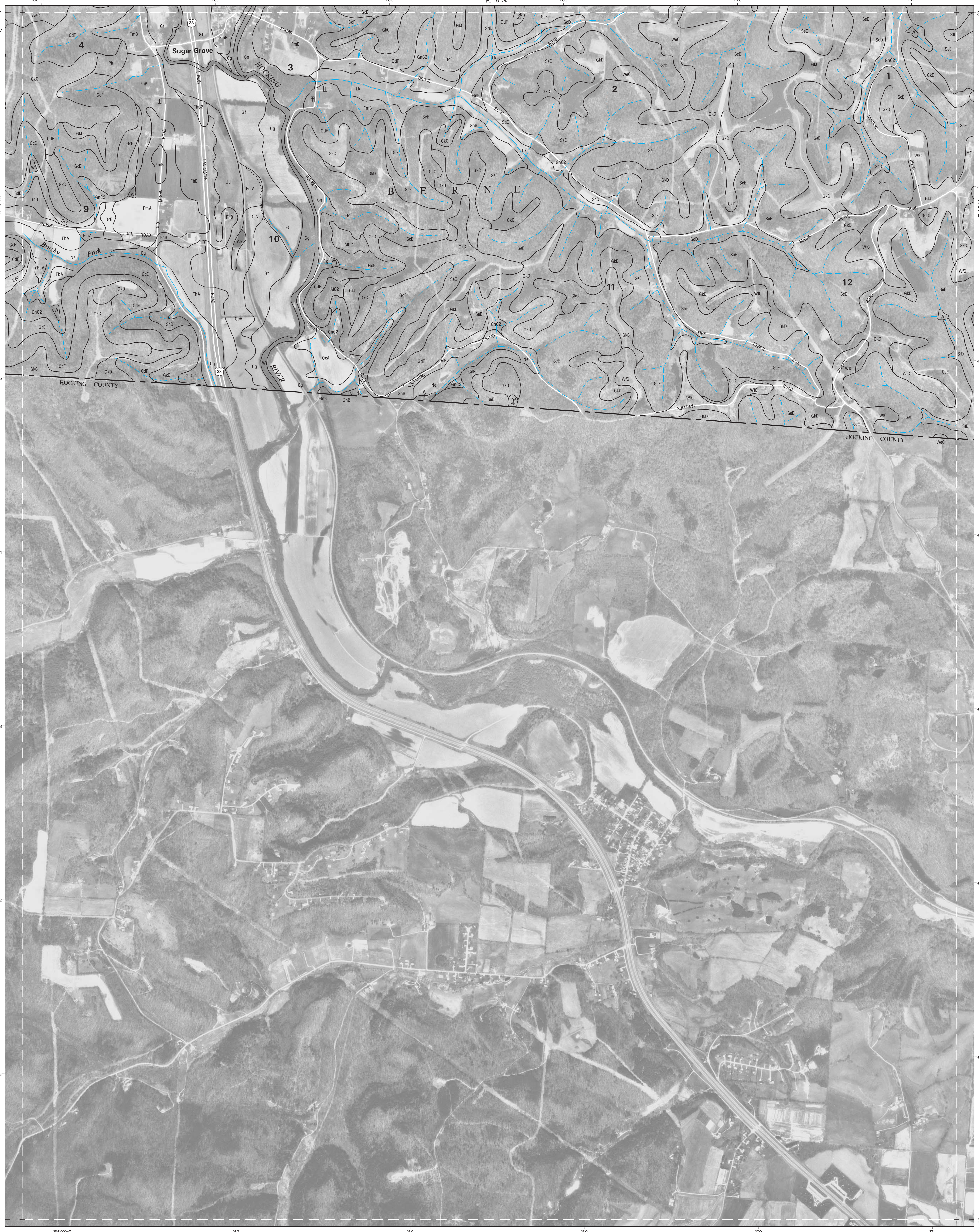
FAIRFIELD COUNTY, OHIO
ROCKBRIDGE NE QUADRANGLE
SHEET NUMBER 47 OF 51



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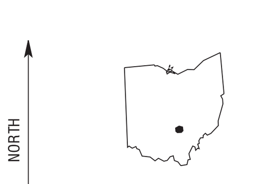
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

37	38	39
46		48

37 LANCASTER SW
38 LANCASTER SE
39 BREMEN SW
46 ROCKBRIDGE NW
48 LOGAN NW

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ROCKBRIDGE NE, OHIO
3.75 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
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FAIRFIELD COUNTY, OHIO
LOGAN NW QUADRANGLE
SHEET NUMBER 48 OF 51

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1996 aerial photography. Hydrography and cultural features were acquired from NRCS. PLSS was acquired from USGS and edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

38	39	40
47		

38 LANCASTER SE
39 BREMEN SW
40 BREMEN SE
47 ROCKBRIDGE NE

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LOGAN NW, OHIO

3.75 MINUTE SERIES
SHEET NUMBER 48 OF 51

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UNITED STATES
DEPARTMENT OF AGRICULTURE
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FAIRFIELD COUNTY, OHIO
STOUTSVILLE SW QUADRANGLE
SHEET NUMBER 49 OF 51

82° 52′30″ | 39° 33′45″ | 82° 48′45″ | 39° 33′45″

39° 30′00″ | 82° 52′30″ | 82° 48′45″ | 39° 30′00″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

	42	43
	■	50

INDEX TO ADJOINING 3.75 MAPS

42 STOUTSVILLE NW
43 STOUTSVILLE NE
50 STOUTSVILLE SE

STOUTSVILLE SW, OHIO

3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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FAIRFIELD COUNTY, OHIO
STOUTSVILLE SE QUADRANGLE
SHEET NUMBER 50 OF 51

82° 48′ 45″ | 82° 45′ 00″
39° 33′ 45″ | 39° 33′ 45″

39° 30′ 00″ | 39° 30′ 00″
82° 48′ 45″ | 82° 45′ 00″

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

42	43	44
49		51

42 STOUTSVILLE NW
43 STOUTSVILLE NE
44 CLEARPORT NW
49 STOUTSVILLE SW
51 CLEARPORT SW

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STOUTSVILLE SE, OHIO

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UNITED STATES
DEPARTMENT OF AGRICULTURE
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FAIRFIELD COUNTY, OHIO
CLEARPORT SW QUADRANGLE
SHEET NUMBER 51 OF 51

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

43	44	45
50		

43 STOUTSVILLE NE
44 CLEARPORT NW
45 CLEARPORT NE
50 STOUTSVILLE SE

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CLEARPORT SW, OHIO
3.75 MINUTE SERIES
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